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WATER QUALITY ASSESSMENT OF WEKUSKO LAKE, MANITOBA, CANADA

Manitoba Water Stewardship Report No. 2005- 02

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WATER QUALITY ASSESSMENT OF WEKUSKO LAKE, MANITOBA, CANADA

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Manitoba
Water Stewardship

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Water quality assessment of Wekusko Lake, Manitoba, Canada.

Summary

A water quality study of Wekusko Lake was conducted during the summer of 2003. Although initial water sampling was also done in other parts of the lake, this study focused on the northwest side of Wekusko Lake in the area offshore from a cottage and housing development located at Taylor, Berry, and Anderson bays.

Water samples were collected on five occasions during the summer of 2003 at three main water quality monitoring sites located on the northwest side of Wekusko Lake. During the initial sampling in June, duplicate water samples were also collected at Herb Bay to the north and at Herb Lake Landing to the south. Volunteers assisted with the initial sampling and collected all of the remaining four sets of samples over the summer. All water sampling was done with an integrated sampler that collected water within the euphotic zone. Water from the initial two sets of samples was analyzed for 63 to over 100 variables including general chemistry, nutrients, *Eschericia coli* (or fecal coliform) bacteria, dissolved oxygen, major ions, heavy metals, pesticides, and others. Water sampled during the remainder of the summer of 2003 was analyzed for phosphorus, nitrogen, bacteria, chlorophyll *a*, pheophytin *a*, pH, conductivity, and turbidity.

Some 25 water quality objectives were examined for the CCME (Canadian Council of Ministers of the Environment) water quality index. There were few excursions of any of these objectives and the water quality in Wekusko Lake was rated as excellent. Bacteriological characteristics in Wekusko Lake were excellent but, as with all surface waters, lake water should always be boiled or disinfected before use for drinking. Trace metal concentrations were low and those used for the water quality index were all below their respective objectives. Pesticide concentrations were below detection limits. Dissolved oxygen concentrations were excellent. Ammonia and nitrate-nitrite nitrogen were low and well below water quality objectives. Dissolved phosphorus concentrations were fairly low and remained relatively stable throughout the summer of 2003. Total phosphorus concentrations exceeded the water quality objective approximately 50% of the time in 2003. However, there was no significant difference between average phosphorus concentrations in Wekusko Lake in 2003 and historic data, mainly from the 1970s and 1980s. Turbidity in 2003 was significantly lower than historically. Chlorophyll *a* extracted from algae was generally moderately low. Specific conductivity was somewhat higher in 2003 than historically which may indicate a possible increase in dissolved minerals. However, over all the water quality in Wekusko Lake was rated as "Excellent" (CCME WQI).

Évaluation de la qualité de l'eau du lac Wekusko, au Manitoba (Canada)

Sommaire

Une étude sur la qualité de l'eau du lac Wekusko a été effectuée au cours de l'été 2003. Elle portait sur des échantillons prélevés dans la partie nord-ouest du lac Wekusko (même si des échantillons préliminaires ont également été prélevés dans d'autres secteurs du lac), plus précisément au large d'un ensemble de résidences et de chalets situé sur les baies Taylor, Berry et Anderson.

Des échantillons d'eau ont été prélevés à cinq reprises au cours de l'été 2003, dans trois importants sites de surveillance de la pollution de l'eau, sur la rive nord-ouest du lac Wekusko. Durant l'échantillonnage préliminaire effectué au mois de juin, on a également prélevé des échantillons en double dans la baie Herb, au nord, et au lieu-dit *Herb Lake Landing*, au sud. Des bénévoles ont prêté la main à l'échantillonnage préliminaire et ont prélevé les quatre ensembles d'échantillons restants au cours de l'été. Pour tous les échantillonnages, on a utilisé un échantillonneur-intégrateur avec lequel on a prélevé de l'eau dans la zone euphotique. L'eau des deux ensembles d'échantillonnages préliminaires a été analysée pour 63 à 100 et quelques variables, y compris la composition chimique générale de l'eau, les nutriments, la bactérie *Eschericia coli* (colibacilles fécaux), l'oxygène dissous, les ions majeurs, les métaux lourds et les pesticides. L'eau prélevée au cours des échantillonnages ultérieurs de l'été 2003 a été analysée pour le phosphore, l'azote, les bactéries, la chlorophylle-*a*, la phéophytine-*a*, le pH, la conductivité et la turbidité.

Environ 25 objectifs de qualité de l'eau ont été examinés pour l'indice de la qualité des eaux du Conseil canadien des ministres de l'environnement (CCME). On a constaté peu d'écarts avec ces objectifs, et la qualité de l'eau du lac Wekusko a été qualifiée d'excellente. Les caractéristiques bactériologiques du lac Wekusko sont excellentes, mais, comme toutes les eaux de surface, celle du lac devrait toujours être bouillie ou désinfectée avant d'être bue. Les concentrations d'oligoéléments étaient faibles et celles utilisées pour l'indice de la qualité des eaux se situaient toutes en dessous du niveau de leur objectif respectif. Les concentrations de pesticides étaient inférieures au seuil de détection. Les concentrations d'oxygène dissous étaient excellentes. Les concentrations d'azote des nitrates et d'azote des nitrites étaient faibles et nettement inférieures aux objectifs de qualité de l'eau. Les concentrations de phosphore dissous étaient assez faibles et sont restées relativement stables tout au long de l'été 2003. Les concentrations de phosphore total dépassaient l'objectif de qualité de l'eau environ une fois sur deux en 2003. Cependant, on n'a constaté aucune différence importante entre les concentrations moyennes de phosphore dans le lac Wekusko en 2003 et celles des données antérieures, datant principalement des années 70 et 80. Le niveau de turbidité en 2003 était nettement inférieur à celui constaté lors des périodes précédentes. Le niveau de chlorophylle-*a* provenant des algues était en général plutôt faible. Le niveau de conductivité spécifique en 2003 était légèrement supérieur à celui des périodes antérieures, ce qui pourrait révéler une augmentation des corps minéraux dissous. Cependant, la qualité générale de l'eau du lac Wekusko a été qualifiée d'excellente (IQE-CCME).

Water quality assessment of Wekusko Lake, Manitoba, Canada.

BACKGROUND

Wekusko Lake is located in northern Manitoba at 54° 45' N, 99° 50' W. The lake has a surface area of 17,653 ha, a maximum depth of 15.8 m or greater, and a mean depth of 7.1 m (Blunt 1976 and Schlick 1968). Cottage and housing developments are located at Taylor Bay, Berry Bay, and Anderson Bay at the northwest corner and Herb Lake Landing at the southeast corner of Wekusko Lake (Figure 1).

The extreme south end of Wekusko Lake is underlain by dolomite bedrock while the remainder of the lake is underlain by granitic bedrock. The granitic rocks include felsic granulites and associated granitoid complexes, as well as mafic and intermediate metavolcanic rocks. There is active mining in the area between Snow and Wekusko lakes and north of Wekusko Lake (Figure 1). Surface deposits include deep basin deposits of silt and clay with Precambrian outcrops particularly on the west side of Wekusko Lake. Soils are mainly Rock with Grey Luvisol, Fibrasol and Mesisol, with some Eutic Brunsol at the extreme south end of the lake. Vegetation is predominantly northern coniferous forest at the south and west sides of the lake with mixed broadleaf and coniferous species on the northeast side of the lake.

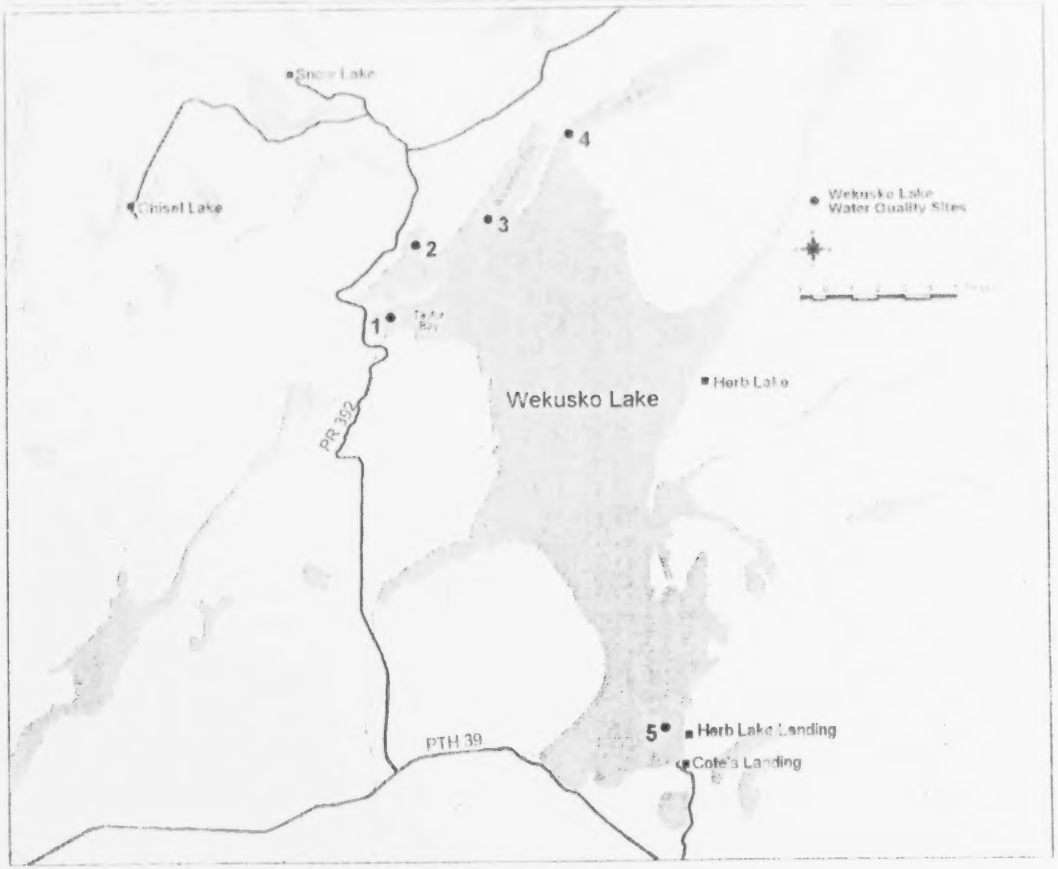
METHODS

Water samples were collected by volunteers on five occasions (June 15, July 6, July 28, August 18, and September 8) during the summer of 2003 at three main water quality monitoring sites located in Taylor Bay (1), Anderson Bay (2), and between Woosey Island and Wedge Point on the north west side of Wekusko Lake (3) (Figure 1). Water sampling was done with an integrated sampler that collected water within the euphotic zone. During the initial sampling on June 15 provincial staff assisted with the collection of extra water samples. This included a second set of dissolved oxygen samples collected one metre off the bottom at sites 1, 2, and 3 (Figure 1). Also on June 15, four additional water samples were collected with one to the east and one to the west of site 4 in Herb Bay, and one to the north and one to the south of site 5 at Herb Lake Landing (Figure 1). Water samples collected on June 15, were analyzed for over 100 variables including general chemistry, nutrients, *Eschericia coli* (fecal coliform) bacteria, dissolved oxygen, major ions, heavy metals, pesticides, and others. Samples collected on July 6, were analyzed for a similar set of variables, excluding only dissolved oxygen and pesticides. Samples collected on July 28, August 18, and September 8, were analyzed for phosphorus, nitrogen, bacteria, chlorophyll *a*, pheophytin *a*, pH, conductivity, and turbidity.

Laboratory analyses for the 2003 water samples was conducted at CANTEST Laboratories for all analytes except for *Eschericia coli* (fecal coliform) bacteria which were analyzed at EnviroTest Laboratories. Historical data from 1999 and prior years that were used for comparisons in this report were from water samples analyzed at EnvoroTest Laboratories (Formerly W.M. Ward Technical Services Laboratory).

Integrated water sampling procedures used during the summer included measuring the Secchi disk depth. The Secchi disk is a 20 cm diameter black and white disk that was lowered into the water to the point where it disappeared from sight and then lifted until it could just be seen. The Secchi disk depth was then recorded. Samples were collected, where possible, throughout the water column to a depth of twice the Secchi disk depth. A depth of twice the Secchi disk depth approximates the depth of the euphotic zone, or zone of light penetration where algal photosynthesis can occur.

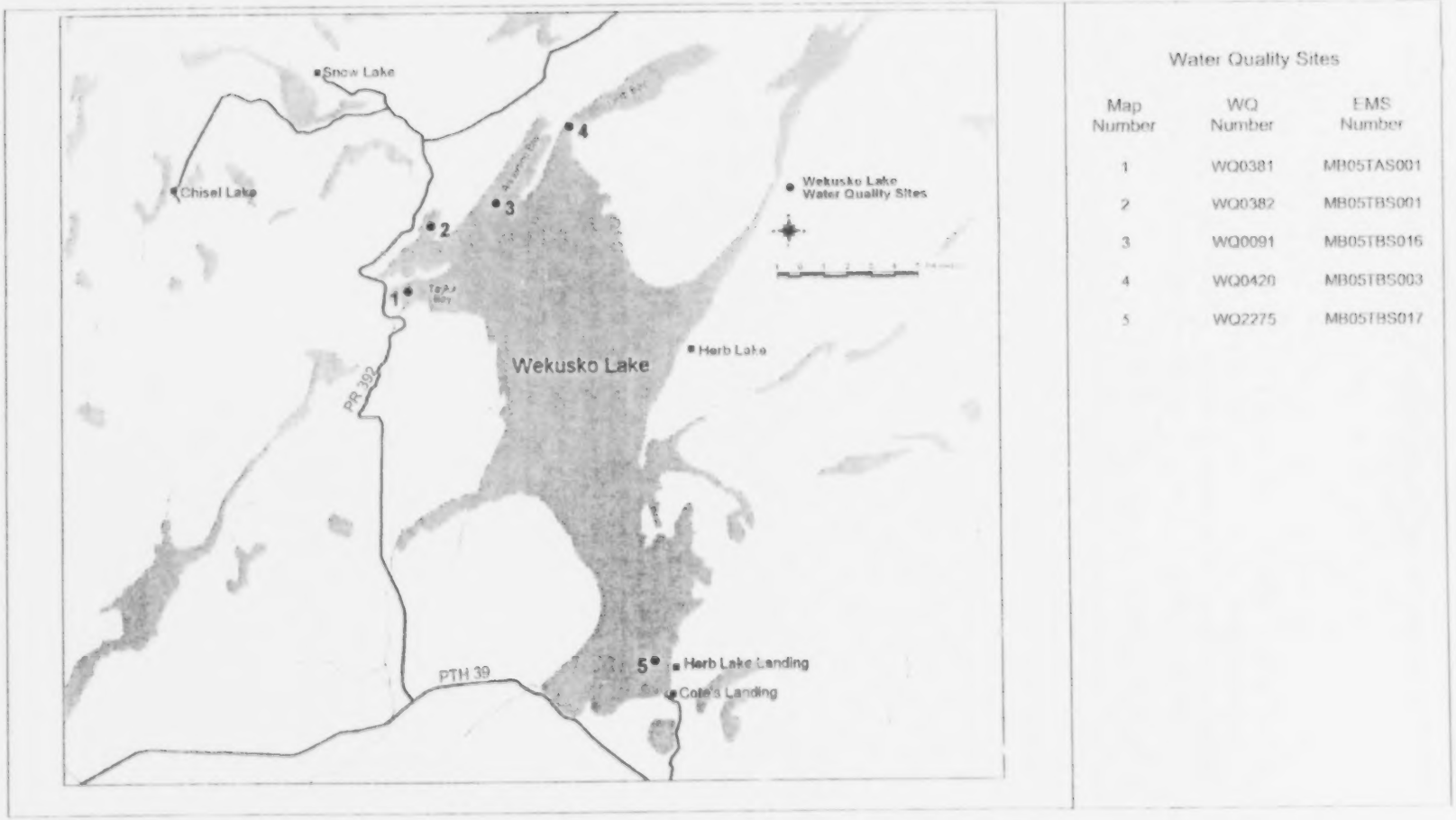
Data collected over the summer of 2003 at sites 1, 2, and 3 (Figure 1) were compared using Student's *t* tests. A Student's paired *t* test ($\alpha = 0.05$) was used to test for differences in concentrations of



Water Quality Sites

Map Number	WQ Number	EMS Number
1	WQ0381	MB05TAS001
2	WQ0382	MB05TBS001
3	WQ0091	MB05TBS016
4	WQ0420	MB05TBS003
5	WQ2275	MB05TBS017

Figure 1. Wekusko Lake water quality sites (WQ and EMS numbers refer to site identification on Water Quality database).



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5	WQ2275	MB05TBS017

Figure 1. Wekusko Lake water quality sites (WQ and EMS numbers refer to site identification on Water Quality database).

variables between each of the three sites for 3003 data. Standard Student's *t* test comparisons were made where possible between averages for variables in 2003 data for all five sites and the overall average for all sites for data collected between 1976 and 1984 plus a single set of data from 1999. Except for pH, all data were log transformed to reduce variance before all Student's *t* tests were performed.

Water Quality Index

Water quality is typically assessed by measuring a large number of variables, including bacteria, plant nutrients, major ions, trace metals, industrial organics, agricultural pesticides and many others. The Canadian Council of Ministers of the Environment Water Quality Index (CCME WQI 2000) was used to describe the overall quality of water in Wekusko Lake. Some 25 variables were compared with water quality guidelines and objectives (Williamson 2002) to calculate the CCME WQI.

The CCME WQI mathematically incorporates information on water quality from three factors. The basic premise of the index is that water quality is excellent when all water quality guidelines or objectives set to protect water uses are met virtually all the time. When guidelines or objectives are not met, water quality becomes progressively poorer. This condition depends upon the number of water quality variables for the objectives or guidelines that are not met (Factor 1), the percentage of time they are not met (Factor 2), and an equation which uses the normalized sum of departures from objectives (Factor 3).

For example, progressively smaller index values result when guidelines or objectives are exceeded for more water quality variables (*i.e.* excursions for one variable will have less impact on water uses than simultaneous excursions for many water quality variables), when excursions occur during longer periods of time (*i.e.*, an excursion for a brief period will have less impact on a water use than an excursion for an extended period), and when the overall magnitude of excursions increase (*i.e.*, an excursion slightly above a water quality guideline or objective will have less impact on a water use than an excursion that is several times higher). Thus, the index logically incorporates information on water quality based on comparisons to guidelines or objectives to protect important water uses. The CCME WQI ranges from 0 to 100 and was used to rank water quality in categories ranging from poor to excellent. An excellent CCME WQI rating (95-100) indicates that all water uses are protected, with a virtual absence of impairment or only a minimal degree of impairment. A good CCME WQI rating (80-94) indicates that all water quality uses are protected with only a minor degree of impairment. A fair CCME WQI rating (60-79) indicates that most water uses are protected but a few may be impaired. A marginal CCME WQI rating (45-59) indicates that several water uses may be impaired while a poor CCME WQI rating (0-44) indicates that most water uses are impaired.

RESULTS AND DISCUSSION

The Wekusko Lake study was aimed at examining trends in phosphorus, nitrogen, *Eschericia coli* (fecal coliform) bacteria, chlorophyll *a*, and pheophytin *a* concentrations, as well as pH, conductivity, and turbidity measurements over the summer of 2003. Water quality data for these variables for each sampling date at each site (Figure 1) and averages over the summer of 2003 are shown in Table 1. Concentrations for over 100 variables measured in water samples collected on June 15 and July 6, 2003 are shown in Table 2. Historical water quality data are shown in Tables 3 and 4. Appendix 1 includes results of standard Students *t* tests between 2003 log transformed data means and historical log transformed data means. Appendix 2 is a summary listing of objectives (Williamson 1988 and 2001), for most of the water quality variables sampled during 2003. Appendix 3 includes a description of the CCME Water Quality Index (CCME WQI) that lists of variables and their respective objectives used for the CCME WQI in this report.

Nutrients

Nutrients required for the growth of algae and other plants include phosphorus and nitrogen. Analyses were conducted for total and dissolved phosphorus, ammonia-ammonium nitrogen (total ammonia) as well as nitrate-nitrite nitrogen and total Kjeldahl nitrogen (Figures 2 and 3).

Phosphorus often limits algae growth since it is likely to be the least abundant nutrient. While dissolved phosphorus was found in relatively low concentrations, total phosphorus exceeded the 0.025 mg/L objective approximately 50% of the time (Table 1, Figure 2). Average total phosphorus was 0.026 mg/L. Phosphorus concentrations exceeding 0.025 mg/L may provide potential for nuisance algae blooms or rooted macrophyte growth in lakes (Appendix 2). The water quality sampling site in Anderson Bay (Map site 2) was the shallowest collection site with a total depth of approximately 2.0 m. It was at this site that the highest total phosphorus concentration of about 0.040 mg/L occurred on June 15, 2003 (Table 1). Anderson Bay was particularly turbid due to a windstorm event that had lasted for two days prior to sampling. Concentrations of up to 0.080 mg/L of total phosphorus were noted in this bay and in other parts of Wekusko Lake in the 1970s and 1980s (Table 3). There was no significant difference between sites 1, 2, and 3 with respect to total phosphorus concentrations in 2003 (Table 1). Also, there was no significant difference between mean total phosphorus concentrations for all samples collected from Wekusko Lake in 2003 and mean historic total phosphorus concentrations (Table 3, and Appendix 1).

Total ammonia, and nitrate-nitrite were present in low concentrations in Wekusko Lake (Table 1). High ammonia nitrogen levels can potentially kill fish, but ammonia concentrations in all samples were very low and well below their calculated objectives. Nitrate-nitrite nitrogen concentrations were frequently at less than detectable levels and were more than three orders of magnitude lower than the objective for human health of 10 mg/L.

Turbidity

Turbidity rises with increases in suspended particulate material (total suspended solids). Average turbidity in Wekusko Lake was low at 1.53 NTU (Table 1, Figure 4). There was no significant difference between sites 1, 2, and 3 with respect to turbidity concentrations in 2003 (Table 1). The highest single turbidity in 2003 was 5.5 NTU noted at the shallow Anderson Bay site (site 2) on June 15, 2003 after a two day wind event (Table 1). Increases in turbidity are frequently related to total phosphorus increases and in this case turbidity and total phosphorus concentration at this site both peaked on the same day. Turbidity in Wekusko Lake actually showed a significant decrease from levels observed in the 1970s and 1980s (Appendix 1).

Chlorophyll *a*

Chlorophyll *a* is a green pigment contained in growing plant tissue and was only measured in 2003. Chlorophyll *a*, when extracted from algae contained in a water sample, can be used as a relative measure of the extent of algal growth. Average chlorophyll *a* in Wekusko Lake was 6.67 µg/L in 2003. Peak chlorophyll *a* concentrations tended to coincide with peak total phosphorus concentrations and were highest at the end of the summer (Table 1, and Figure 5). There was no significant difference between sites 1, 2, and 3 with respect to chlorophyll *a* concentrations in 2003 (Table 1). Maximum chlorophyll *a* concentrations were observed in September at all three sites. Although chlorophyll *a* was not measured in macrophytes (rooted aquatic weeds), volunteer samplers noted a substantial growth of macrophytes later in the summer and this was probably exacerbated by relatively low water levels in Wekusko Lake during the summer of 2003.

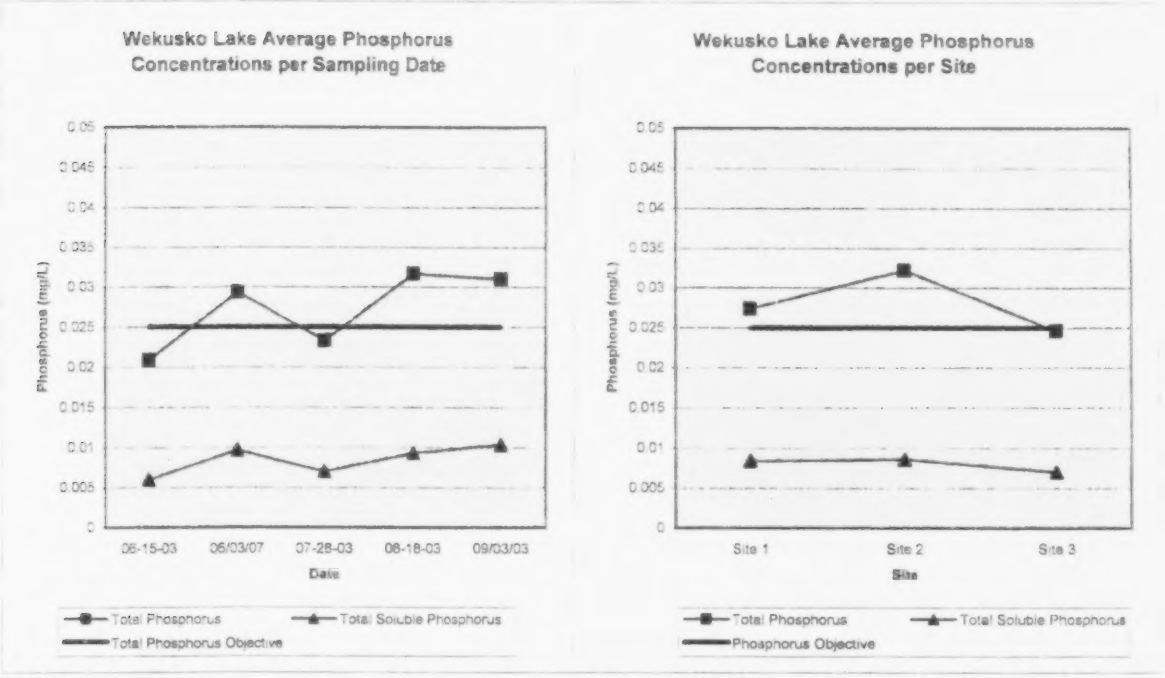

Figure 2. Average total and dissolved phosphorus concentrations, Wekusko Lake, 2003.

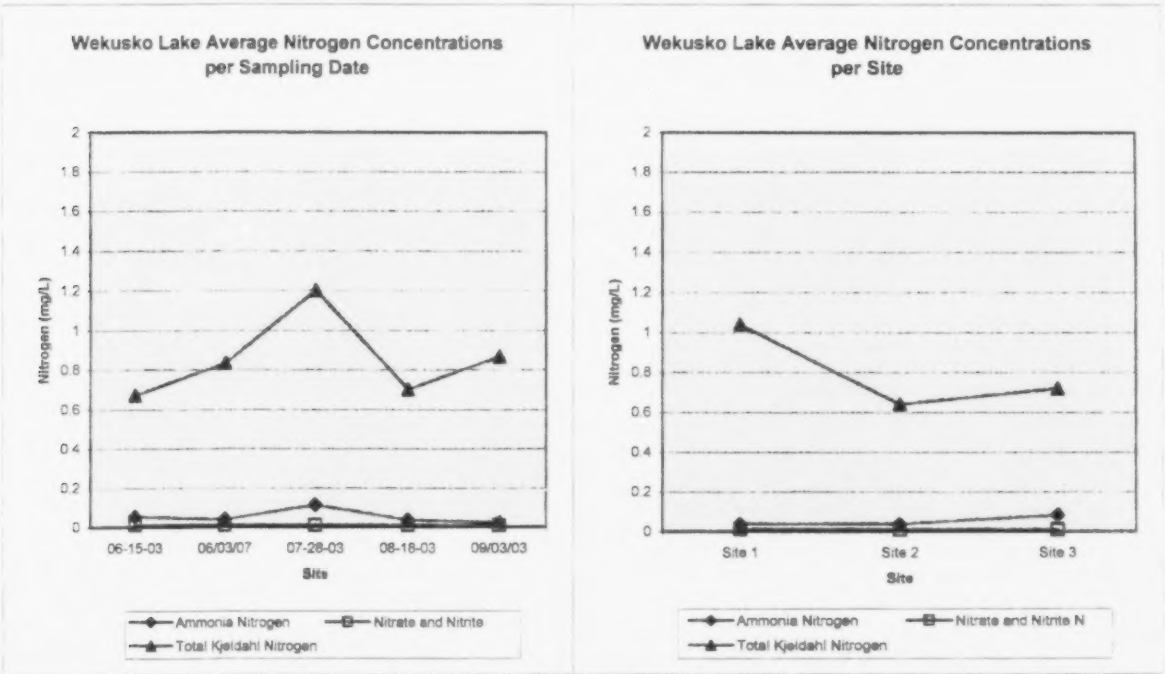

Figure 3. Average ammonia, nitrate-nitrate and total Kjeldahl nitrogen concentrations, Wekusko Lake, 2003.

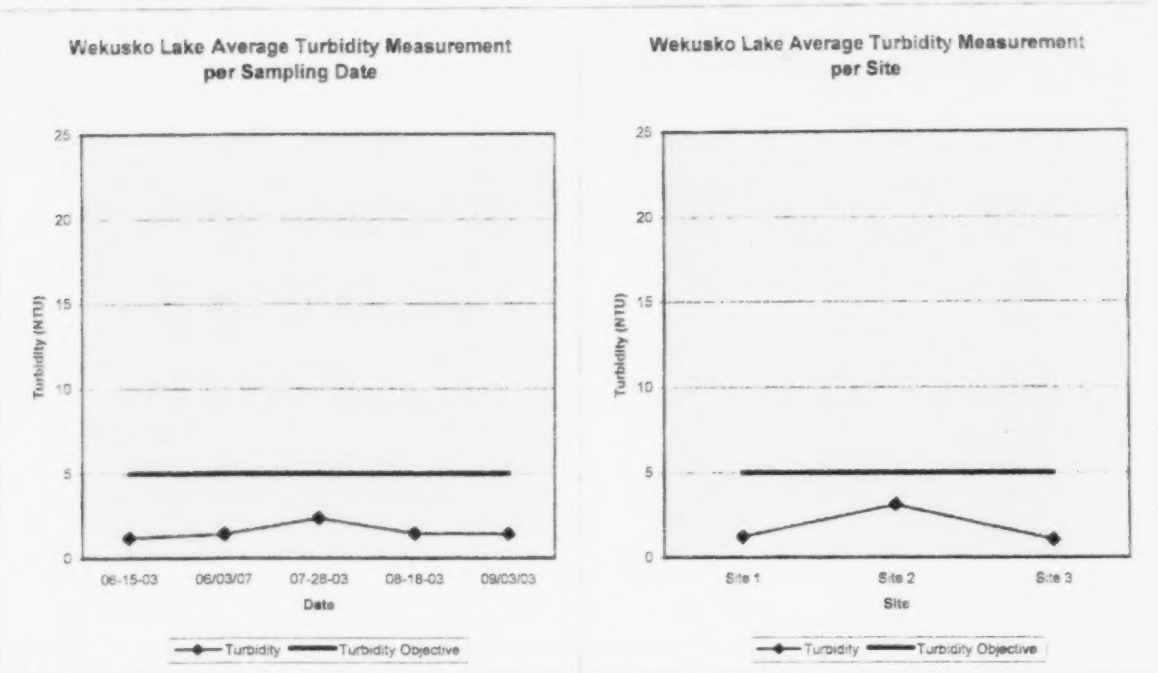

Figure 4. Average turbidity measurements, Wekusko Lake, 2003.

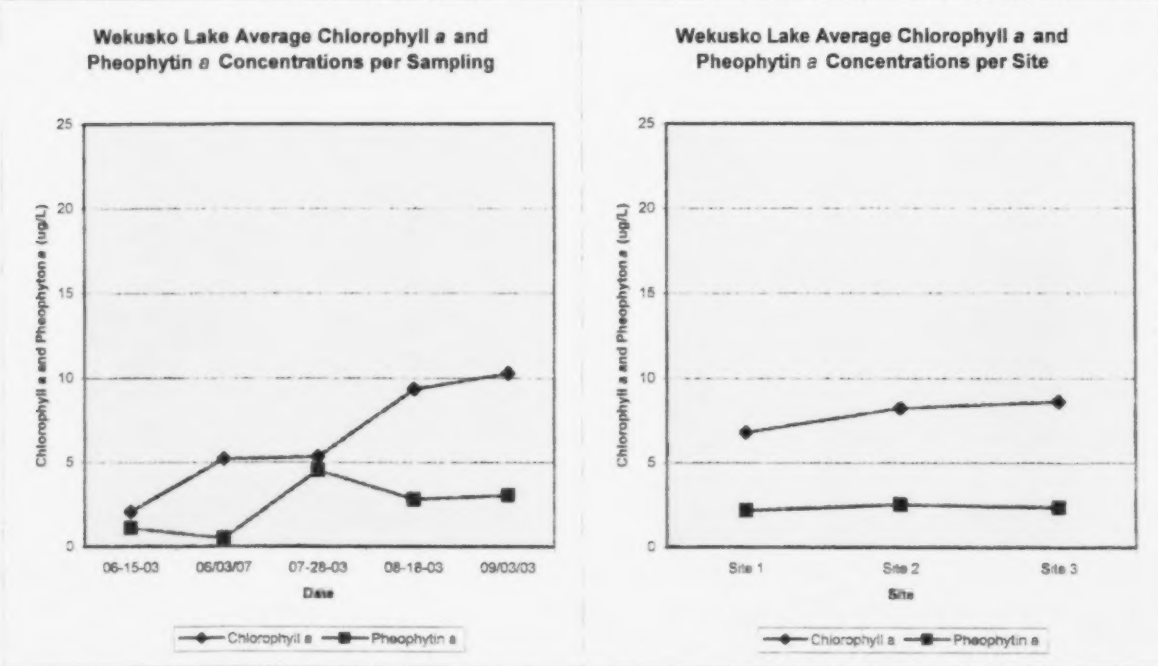

Figure 5. Average chlorophyll *a* and pheophyton *a* concentrations, Wekusko Lake, 2003.

***Eschericia coli* (Fecal Coliform) Bacteria**

Escherichia coli bacteria counts were at or less than the detection limit of 10 colony forming units (CFU/100 mL) in Wekusko Lake over the summer of 2003 as well as during the 1970s and 1980s (Table 1).

pH

During the summer of 2003, the pH values in Wekusko Lake ranged from 7.25 to 8.13 units were well within recommended objectives for pH (Table 1, Appendix 2). The pH tended to rise over the summer of 2003 (Figure 6), in part as a response to increased algal abundance as indicated by higher chlorophyll *a* concentrations. Algal respiration affects pH through increases carbon dioxide concentrations in the water. In the 1970s and 1980s, pH ranged from 7.10 to 8.65 units, also well within the objective range of 6.5 and 9.0 recommended for the protection of aquatic life (Appendix 2). Average pH in 2003 appeared to be significantly lower than during the 1970s and 1980s. However, statistical analyses from data from other northern lakes and rivers indicated that differences between pH values in 2003 and pH values prior to 2001 were probably due to differences between laboratory pH measurement procedures (Appendix 1).

Specific Conductivity

Specific conductivity is a measure of the dissolved salts in water and is closely related to total dissolved solids. Laboratory measured conductivity for Wekusko Lake was very stable and ranged between 165 to 170 µS/cm in 2003 (Table 1, Figure 7). Excluding one anomaly the historical range of laboratory measured conductivity and ranged between 116 to 216 µS/cm (Table 3). These were well below any recommended guidelines (Appendix 2). The average conductivity of 167 µS/cm in 2003 was significantly higher than the average historical conductivity of 153 µS/cm and may have indicated a potential increase in some dissolved minerals (Appendix 1).

Water Quality on June 15 and July 6, 2003

Results for over 100 variables measured in water samples collected on June 15 and July 6, 2003 are shown in Tables 1 and 2 for Wekusko Lake. Of these, 25 variables were used to calculate the CCME Water Quality Index (CCME WQI) for Wekusko Lake (Appendix 3). Variables used in this index included total phosphorus, ammonia, *Eschericia coli* bacteria, pH, and specific conductivity, as well as other variables in the following discussion.

Total suspended solids (TSS) in Wekusko Lake on June 15 and July 6, 2003 ranged from < 1 to 12 mg/L (Table 2). Total suspended solids were well below the objective of 25 mg/L used for the CCME WQI (Tables 5 and 6 and Williamson 2002). It is unlikely that suspended solids would have exceeded the objective during the remainder of the summer since the turbidity never exceeded 5.5 NTU (Table 1).

Dissolved oxygen is essential to the survival of fish stocks. Dissolved oxygen concentrations ranged from 9.8 to 10.4 mg/L (Table 2). These dissolved oxygen concentrations were well above the 5 mg/L objective recommended for the maintenance of cool water aquatic life (Table 2 and Appendix 3).

Trace element analyses from water samples collected on June 15 and July 6, 2003 included total concentrations of cadmium, copper, nickel, lead, zinc, arsenic, and dissolved aluminum, all of which were used as indicators in this assessment (Appendix 3). In 2003, total lead concentrations were all near or below detection limits and these values, as well as arsenic, copper, cadmium, nickel, and zinc concentrations were all well below their lowest respective objectives (Table 2, and Appendices 2 and 3).

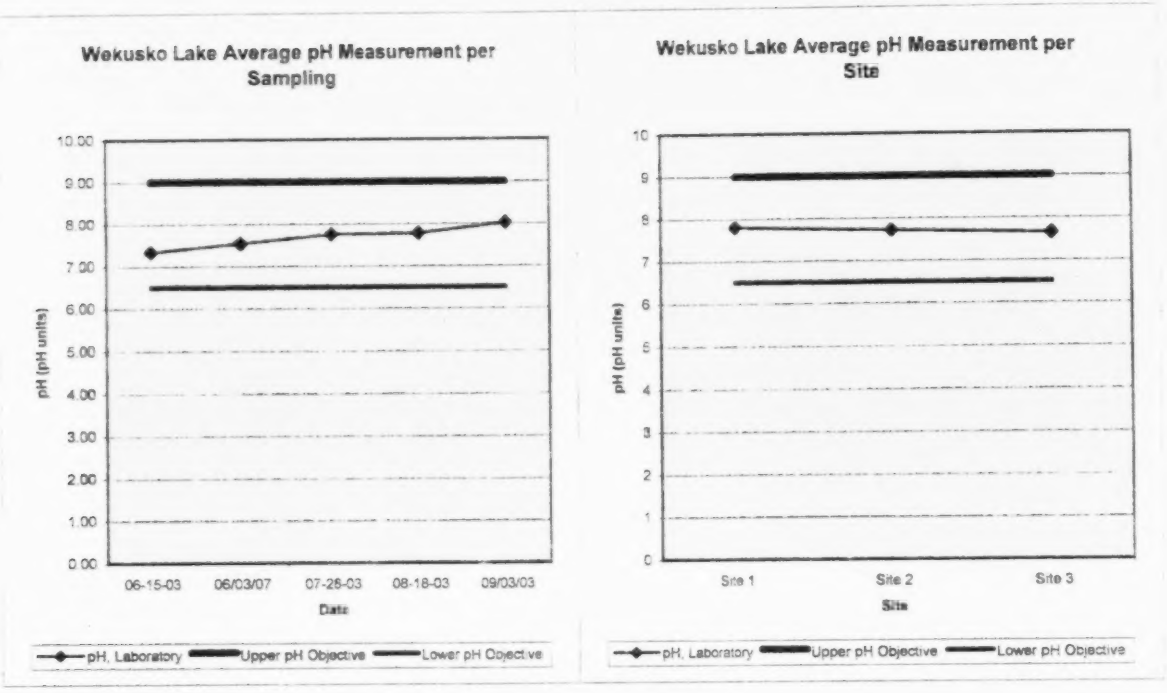

Figure 6. Average pH measurements, Wekusko Lake, 2003.

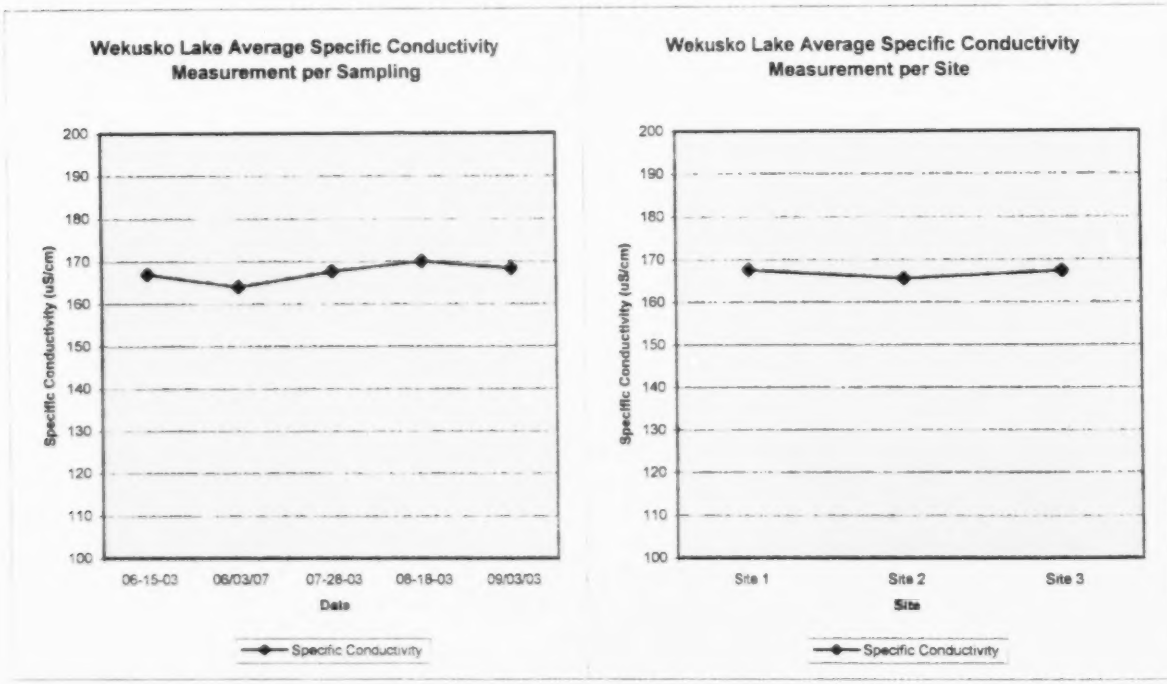

Figure 7. Average specific conductivity measurements, Wekusko Lake, 2003.

The objective for aluminum is dependent on pH and in all cases the objective was 0.1 mg/L. There were no excursions of this objective for dissolved aluminum that is used as an indicator for this assessment. However, there were two of 10 samples that exceeded this objective for total aluminum in 2003.

Iron and manganese are of an aesthetic concern (Tables 2, 5 and 6) in drinking water but can be removed with treatment. Total iron and manganese concentrations were well below recommended objectives of 0.3 and 0.05 mg/L, respectively (Williamson 2002).

Pesticide analyses were conducted on water samples collected from Wekusko Lake on June 15, 2003. None of the 39 pesticides tested were detected (Tables 2).

The CCME Water Quality Index (CCME WQI) for Wekusko Lake was based on the 25 variables previously discussed. Figure 8 shows the CCME WQI rating for Wekusko Lake as well as seven other northern Manitoba lakes (Athapapuskow, Snow, Setting, Rocky, Paint, Liz, and Clearwater lakes). The CCME WQI indicated "Excellent" water quality for six of the lakes including Wekusko Lake, with the CCME WQI falling in the range of 95 to 100 (Appendix 3). The e "Excellent" rating was due to only nine excursions, all for total phosphorus (Appendix 3, Table 1). The only one of these northern lakes that rated a perfect score of 100 was Liz Lake in 1998, where there were no excursions for any of the 25 objectives.

A water quality index rating of "Excellent" indicates that:

- all water uses are protected, with a virtual absence of impairment or only a minimal degree of impairment,
- no water uses are ever interrupted and,
- conditions rarely depart from desirable quality.

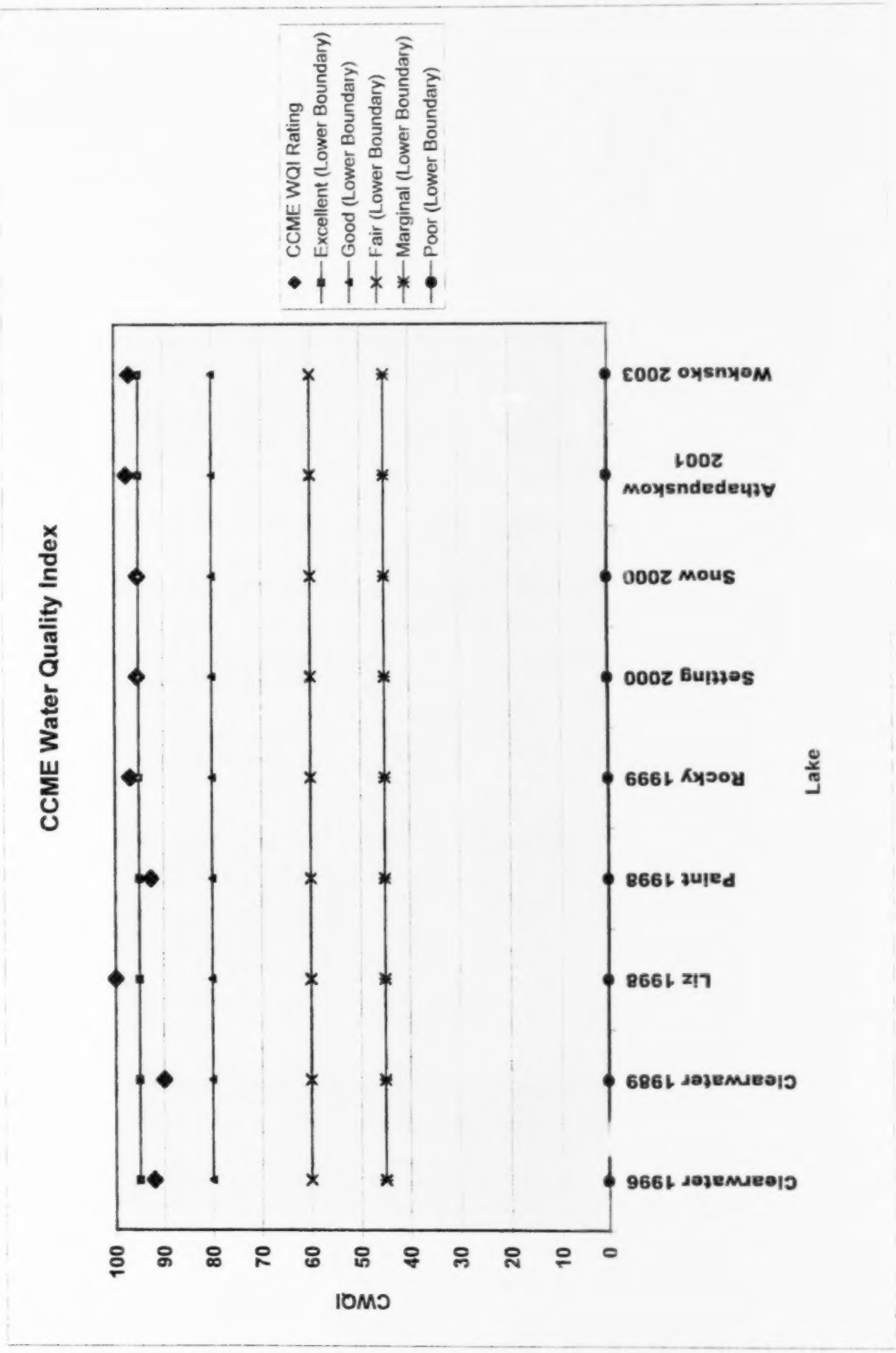

Figure 8. Comparison of CCME Water Quality Indices for eight northern lakes.

CONCLUSIONS

The Wekusko Lake study involved water quality sampling over the summer of 2003 at three main sites located in Taylor Bay, Anderson Bay and near Woosey Island on the north west side of the lake. On a once only basis, duplicate sampling was also completed on at Herb Bay and Herb Lake Landing, at the north and south ends of the lake, respectively. There were no significant differences between each of the three main sites with respect to variables tested for throughout the summer of 2003. It can be concluded that:

- Bacteriological characteristics in Wekusko Lake were excellent but, as with all surface waters, lake water should always be boiled or disinfected before use for drinking.
- Trace metal concentrations were low and those used for the water quality index were all below their respective objectives.
- Pesticide concentrations were below detection limits.
- Dissolved oxygen concentrations were excellent.
- Ammonia and nitrate-nitrite nitrogen were low and well below water quality objectives.
- Dissolved phosphorus concentrations were fairly low and remained relatively stable throughout the summer of 2003.
- Total phosphorus concentrations exceeded the water quality objective approximately 50% of the time. Total phosphorus tended to be higher in the shallower bays but there was no significant difference in total phosphorus concentrations between the three main sites in 2003. Also, there was no significant difference between average phosphorus concentrations in Wekusko Lake in 2003 and historic data, mainly from the 1970s and 1980s.
- Turbidity was not significantly different between the three main sites in 2003 but was significantly lower than historically.
- Chlorophyll *a* extracted from algae was generally moderately low and was not significantly different between the three main sites in 2003.
- pH was stable and was not significantly different between the three main sites in 2003.
- Specific conductivity was not significantly different between the three main sites in 2003. However, conductivity was significantly higher in 2003 than historically possibly indicating an increase in dissolved minerals.
- Water quality in Wekusko Lake was rated as "Excellent" (CCME WQI).

ACKNOWLEDGMENTS

We do greatly appreciate George Robertson and Audrey Robertson, volunteers from the Snow Lake Cabin Owners Association, who used their boat to conduct the water quality sampling on Wekusko Lake during the summer of 2003. Other contacts with the association were Lillian Haines, Robert Forsyth, and Twila Kurchinski. We are also grateful for the assistance of Steve Davis, Joel Nilsen, and Darcy Chrisp of Manitoba Conservation.

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Tables 1 through 3

Table 1. Physical, chemical and biological variables, Wekusko Lake, June 15 through September 8, 2003.

		Taylor Bay					Anderson Bay					Between Woosey Island and Wedge Point				
Map Site		1	1	1	1	1	2	2	2	2	2	3	3	3	3	3
EMS		MB05TAS001	MB05TAS001	MB05TAS001	MB05TAS001	MB05TAS001	MB05TBS001	MB05TBS001	MB05TBS001	MB05TBS001	MB05TBS001	MB05TBS016	MB05TBS016	MB05TBS016	MB05TBS016	MB05TBS016
WQ Site		WQ0381	WQ0381	WQ0381	WQ0381	WQ0381	WQ0382	WQ0382	WQ0382	WQ0382	WQ0382	WQ0091	WQ0091	WQ0091	WQ0091	WQ0091
Integrated Sample		# 1	# 2	# 3	# 4	# 5	# 1	# 2	# 3	# 4	# 5	# 1	# 2	# 3	# 4	# 5
Date Sampled		06/15/2003	07/06/2003	07/28/2003	08/18/2003	09/08/2003	06/15/2003	07/06/2003	07/28/2003	08/18/2003	09/08/2003	06/15/2003	07/06/2003	07/28/2003	08/18/2003	09/08/2003
Field Parameters	Units															
Temperature	°C	19.0	NA	23.0	23.0	NA	17.0	NA	24.0	24.0	NA	17.0	NA	23.0	23.0	NA
Secchi Depth	m	2.6	NA	1.5	1.5	NA	0.7	NA	2.0	2.0	NA	2.5	NA	2.5	2.5	NA
Total Depth	m	3.0	NA	NA	NA	NA	2.0	NA	NA	NA	NA	5.0	NA	NA	NA	NA
Laboratory Parameters	Units															
Bacteria *Escherica coli*	CFU /100 mL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH, Laboratory	pH units	7.40	7.53	7.74	8.04	8.29	7.53	7.55	7.64	7.74	8.13	7.26	7.54	7.88	7.54	8.03
Specific Conductivity	uS/cm	170	167	167	169	165	160	162	168	171	167	168	163	168	170	168
Turbidity	NTU	0.50	1.60	1.40	1.30	1.40	5.50	1.60	5.10	1.60	1.70	0.45	1.10	0.61	1.50	1.70
Ammonia Nitrogen N	mg/L	0.06	0.05	0.02	0.05	< 0.01	0.06	0.04	0.07	< 0.01	< 0.01	0.06	0.03	0.25	0.05	0.03
Nitrate and Nitrite N	mg/L	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total Kjeldahl Nitrogen N	mg/L	0.9	0.8	1.1	1.6	0.8	0.6	0.9	1.1	0.2	0.4	0.9	0.8	1.4	0.3	< 0.2
Total Phosphorus[1] P	mg/L as P	0.022	**0.027**	**0.029**	**0.034**	0.025	**0.040**	**0.032**	0.024	**0.034**	**0.031**	0.020	**0.029**	0.017	**0.027**	0.030
Total Particulate Phosphorus P	mg/L as P	0.017	0.019	0.021	0.022	0.016	0.032	0.020	0.017	0.024	0.025	0.014	0.020	0.011	0.021	0.022
Total Soluble Phosphorus P	mg/L as P	0.005	0.008	0.008	0.012	0.009	0.008	0.012	0.007	0.01	0.006	0.006	0.009	0.006	0.006	0.008
Chlorophyll *a*	ug/L	2.4	3.6	7.2	7.0	13.8	2.4	7.2	4.8	10.0	16.8	1.2	4.8	4.0	11.0	22.1
Pheophytin *a*	ug/L	< 0.5	< 0.5	4.1	2.8	3	3.1	< 0.5	2.3	3.3	3.4	0.9	< 0.5	7.2	2.3	0.9

1 Total phosphorus greater than 0.025 mg/L highlighted.

Table 1. (Continued).

Map Site		Herb Bay		Herb Lake Landing		Wekusko Lake			Comparisons Between (Map) Sites 1 through 3 Student's Paired *t* Test ($\alpha = 0.5$)		
		4 (East of)	4 (West of)	5 (North of)	5 (South of)				1 & 2	1 & 3	2 & 3
EMS		MB05TBS003	MB05TBS003	MB05TBS017	MB05TBS017						
WQ Site		WQ0420	WQ0420	WQ 2275	WQ 2275				Significance		
Integrated Sample		# 1	# 2	# 1	# 2		Standard		S = Significant Difference, NS = Not Significant		
Date Sampled		06/15/2003	06/15/2003	06/15/2003	06/15/2003	Mean	Deviation	Count	*t*	*t*	*t*
Field Parameters	Units										
Temperature	°C	16.5	17.0	17.5	17.0	NA	NA	NA	NA	NA	NA
Secchi Depth	m	3.6	3.3	> 1.5	> 1.0	NA	NA	NA	NA	NA	NA
Total Depth	m	5.0	8.8	1.5	1.0	NA	NA	NA	NA	NA	NA
Laboratory Parameters	Units										
Bacteria *Escherichia coli*	CFU /100 mL	10	< 10	< 10	< 10	< 10	None	19	*t* = 0.000 NS	*t* = 0.000 NS	*t* = 0.000 NS
pH Laboratory	pH units	7.29	7.25	7.28	7.30	7.63	0.32	19	*t* = 0.329 NS	*t* = 0.246 NS	*t* = 0.486 NS
Specific Conductivity	uS/cm	167	166	169	169	167	2.84	19	*t* = 0.444 NS	*t* = 0.876 NS	*t* = 0.319 NS
Turbidity	NTU	0.40	0.35	0.45	0.77	1.53	1.42	19	*t* = 0.147 NS	*t* = 0.371 NS	*t* = 0.132 NS
Ammonia Nitrogen N	mg/L	0.04	0.05	0.06	0.04	< 0.052	0.05	19	*t* = 0.811 NS	*t* = 0.316 NS	*t* = 0.118 NS
Nitrate and Nitrite N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.002	19	*t* = 0.374 NS	*t* = 0.374 NS	*t* = 0.000 NS
Total Kjeldahl Nitrogen N	mg/L	0.8	0.8	< 0.2	0.5	< 0.753	0.394	19	*t* = 0.196 NS	*t* = 0.231 NS	*t* = 0.828 NS
Total Phosphorus P	mg/L as P	0.014	0.017	0.014	0.019	0.0255	0.007	19	*t* = 0.292 NS	*t* = 0.387 NS	*t* = 0.074 NS
Total Particulate Phosphorus P	mg/L as P	0.011	0.010	0.006	0.014	0.0180	0.006	19	*t* = 0.252 NS	*t* = 0.552 NS	*t* = 0.110 NS
Total Soluble Phosphorus P	mg/L as P	0.003	0.007	0.008	0.005	0.0075	0.002	19	*t* = 0.867 NS	*t* = 0.368 NS	*t* = 0.224 NS
Chlorophyll *a*	ug/L	2.4	2.4	1.2	2.4	6.67	5.76	19	*t* = 0.410 NS	*t* = 0.959 NS	*t* = 0.351 NS
Pheophytin *a*	ug/L	< 0.5	< 0.5	1.7	0.5	< 2.03	1.77	19	*t* = 0.487 NS	*t* = 0.886 NS	*t* = 0.474 NS

Table 2. All physical, chemical and biological variables, Wekusko Lake, June 15 and July 6, 2003.

		Taylor Bay		Anderson Bay		Between Woosey Island & Wedge Point		Herb Bay		Herb Lake Landing		Wekusko Lake		
Map Site		1	1	2	2	3	3	4	4	5	5			
EMS Site		MB05TAS001		MB05TBS001		MB05TBS016		MB05TBS003		MB05TBS017				
WQ Site		WQ0381	WQ0381	WQ0382	WQ0382	WQ0091	WQ0091	WQ0420	WQ0420	WQ 2275	WQ 2275	Mean	Standard Deviation	Count N
Sample Integrated except as noted		# 1	# 2	# 1	# 2	# 1	# 2	# 1 East	# 2 West	# 1 North	# 2 South			
Date Sampled		06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	06/15/2003	06/15/2003	06/15/2003			
Field Parameters	Units													
Sample Time	hrs	12:20	NA	9:35	NA	10:10	NA	10:50	11:20	15:10	14:35	-	NA	NA
Temperature	°C	19.0	NA	17.0	NA	17.0	NA	16.5	17.0	17.5	17.0	NA	NA	NA
Secchi Depth	m	2.6	NA	0.7	NA	2.5	NA	3.6	3.3	< 1.5	< 1	NA	NA	NA
Sample Depth	m	2.5	NA	1.4	NA	4.0	NA	4.0	6.6	1.0	0.5	NA	NA	NA
Total Depth per Site	m	3.0	NA	2.0	NA	5.0	NA	5.0	8.8	1.5	1.0	3.8	2.5	7
Laboratory Parameters	Units													
Bacteria *Escherichia coli*	CFU/100 mL	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	< 10	< 10	See Table 2	-	-
pH, Laboratory	pH units	7.40	7.53	7.53	7.55	7.26	7.54	7.29	7.25	7.28	7.30	See Table 2	-	-
Specific Conductivity	uS/cm	170	167	160	162	168	163	167	166	169	169	See Table 2	-	-
Total Dissolved Solids	mg/L	80	107	74	119	94	114	70	79	94	110	94	16.9	10
Total Suspended Solids	mg/L	2	4	11	5	2	3	1	1	1	3	3	2.9	10
Turbidity	NTU	0.50	1.6	5.50	1.6	0.46	1.1	0.40	0.35	0.45	0.77	See Table 2	-	-
True Colour	CU	< 5	5	5	5	5	5	5	5	5	5	< 5	None	10
Total Alkalinity $CaCO_3$	mg/L	72	70	72	72	70	72	70	68	74	76	71	2.5	10
Bicarbonate Alkalinity HCO_3	mg/L	87.8	85.4	87.8	87.8	85.4	87.8	85.4	80.5	90.3	92.7	87.1	3.1	10
Carbonate Alkalinity CO_3	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	None	10
Hydroxide Alkalinity OH	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	None	10
Hardness (Total) $CaCO_3$	mg/L	74.2	72.4	75.2	72.4	74.1	72	73.5	72.7	74.9	74.8	73.6	1.1	10
Dissolved Oxygen, Integrated	mg/L	8.4	NA	8.0	NA	8.0	NA	8.6	8.3	9.1	9.1	8.5	0.4	7
Dissolved Oxygen, Bottom	mg/L	7.7	-	7.6	-	7.4	-	-	-	-	-	7.6	0.1	3
Total Organic Carbon C	mg/L	9.2	11	9.7	10	9.4	11	10	9.4	9.6	9.1	9.8	0.6	10
Total Inorganic Carbon C	mg/L	17	18	16	18	17	18	16	16	17	17	17	0.8	10
Total Carbon C	mg/L	26	28	26	28	26	29	26	26	26	26	27	1.1	10
Chlorophyll A	ug/L	2.4	3.6	2.4	7.2	1.2	4.8	2.4	2.4	1.2	2.4	See Table 2	-	-
Pheophytin A	ug/L	< 0.5	< 0.5	3.1	< 0.5	0.9	< 0.5	< 0.5	< 0.5	1.7	0.5	See Table 2	-	-
Ammonia Nitrogen N	mg/L	0.06	0.05	0.06	0.04	0.06	0.03	0.04	0.05	0.06	0.04	See Table 2	-	-
Nitrate and Nitrite N	mg/L	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	See Table 2	-	-
Total Kjeldahl Nitrogen N	mg/L	0.9	0.8	0.6	0.9	0.9	0.8	0.8	0.8	< 0.2	0.5	See Table 2	-	-
Total Phosphorus P	mg/L as P	0.022	0.027	0.040	0.032	0.020	0.029	0.014	0.017	0.014	0.019	See Table 2	-	-
Total Particulate Phosphorus P	mg/L as P	0.017	0.019	0.032	0.020	0.014	0.020	0.011	0.010	0.006	0.014	See Table 2	-	-
Total Soluble Phosphorus P	mg/L as P	0.005	0.008	0.008	0.012	0.006	0.009	0.003	0.007	0.008	0.005	See Table 2	-	-
Dissolved Chloride Cl	mg/L	3.2	3.3	3.3	3.3	3.3	3.3	3.8	3.7	3.3	3.2	3.4	0.2	10
Dissolved Sulphate SO_4	mg/L	5.9	6.4	6.3	6.5	6.1	6.4	6	6.1	6.1	6.1	6.2	0.2	10

Table 2. (Continued).

		Taylor Bay		Anderson Bay		Between Woosey Island & Wedge Point		Herb Bay		Herb Lake Landing		Wekusko Lake		
Map Site		1	1	2	2	3	3	4	4	5	5			
EMS Site		MB05TAS001		MB05TBS001		MB05TBS016		MB05TBS003		MB05TBS017				
WQ Site		WQ0381	WQ0381	WQ0382	WQ0382	WQ0091	WQ0091	WQ0420	WQ0420	WQ 2275	WQ 2275	Mean	Standard Deviation	Count N
Sample Integrated except as noted		# 1	# 2	# 1	# 2	# 1	# 2	# 1 East	# 2 West	# 1 North	# 2 South			
Date Sampled		06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	06/15/2003	06/15/2003	06/15/2003			
Metals Analysis	Units													
Total Aluminum Al	mg/L	0.031	0.088	0.160	0.120	0.033	0.060	0.021	0.015	0.024	0.063	0.062	0.048	10
Dissolved Aluminum Al	mg/L	0.012	0.038	0.076	0.031	0.011	0.018	0.005	0.012	0.009	0.031	0.024	0.021	10
Total Antimony Sb	mg/L	0.0005	0.0004	0.0004	0.0006	0.0005	0.0005	0.0005	0.0005	0.0004	0.0004	0.0005	0.00007	10
Total Arsenic As	mg/L	0.0011	0.0012	0.0013	0.0013	0.001	0.0011	0.001	0.001	0.001	0.001	0.001	0.0001	10
Total Barium Ba	mg/L	0.011	0.012	0.013	0.012	0.012	0.012	0.011	0.011	0.012	0.011	0.012	0.0007	10
Total Beryllium Be	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Bismuth Bi	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Boron B	mg/L	< 0.01	0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	None	10
Total Cadmium Cd	mg/L	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004	None	10
Total Calcium Ca	mg/L	15.6	16.6	15.9	16.5	15.6	16.5	15.6	15.5	15.8	15.8	15.9	0.4	10
Total Cesium Cs	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	None	10
Total Chromium Cr	mg/L	< 0.0002	< 0.0002	< 0.0002	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	0.00006	10
Total Cobalt Co	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Copper Cu	mg/L	0.0004	0.0010	0.0008	0.0010	0.0004	0.0012	0.0005	0.0004	0.0003	0.0003	0.0006	0.0003	10
Total Iron Fe	mg/L	0.02	0.14	0.21	0.16	0.02	0.10	< 0.01	< 0.01	< 0.01	0.05	0.07	0.07	10
Total Lead Pb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Lithium Li	mg/L	0.0026	0.0029	0.0028	0.0029	0.0026	0.0028	0.0026	0.0039	0.0026	0.0026	0.0028	0.0004	10
Total Magnesium Mg	mg/L	8.53	7.52	8.60	7.53	8.51	7.47	8.39	8.27	8.61	8.56	8.20	0.49	10
Total Manganese Mn	mg/L	0.0096	0.0160	0.0130	0.0160	0.0069	0.0140	0.0087	0.0100	0.0076	0.0081	0.0110	0.0035	10
Total Molybdenum Mo	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	None	10
Total Nickel Ni	mg/L	< 0.0002	0.0005	0.0003	0.0005	< 0.0002	0.0005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.00030	0.00014	10
Total Phosphate PO_4	mg/L	0.023	0.092	0.041	0.110	0.026	0.091	0.019	0.026	0.018	0.020	0.047	0.036	10
Total Potassium K	mg/L	1.31	1.26	1.40	1.25	1.33	1.25	1.31	1.30	1.28	1.30	1.299	0.045	10
Total Rubidium Rb	mg/L	0.0009	0.0013	0.0013	0.0013	0.0009	0.0012	0.0009	0.0009	0.0009	0.0009	0.0011	0.0002	10
Total Selenium Se	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Silicon SiO_2	mg/L	1.39	2.53	1.57	2.69	1.25	2.14	1.06	1.24	1.73	1.63	1.72	0.56	10
Total Silver Ag	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	None	10
Total Sodium Na	mg/L	3.31	3.10	3.53	3.13	3.41	3.13	3.64	3.55	3.39	3.40	3.36	0.19	10
Total Strontium Sr	mg/L	0.033	0.040	0.034	0.040	0.033	0.040	0.035	0.034	0.033	0.033	0.036	0.003	10
Total Tellurium Te	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Thallium Tl	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	None	10
Total Thorium Th	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	None	10
Total Tin Sn	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	None	10
Total Titanium Ti	mg/L	0.0018	0.0052	0.0098	0.0063	0.0018	0.0040	0.0009	0.0010	0.0016	0.0040	0.0036	0.0029	10
Total Uranium U	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	None	10
Total Vanadium V	mg/L	< 0.0002	0.0004	0.0004	0.0005	< 0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.00028	0.00011	10
Total Zinc Zn	mg/L	0.001	0.008	0.003	0.002	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.002	0.002	10
Total Zirconium Zr	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	None	10

Table 2. (Continued).

		Taylor Bay		Anderson Bay		Between Woosey Island & Wedge Point		Herb Bay		Herb Lake Landing		Wekusko Lake		
Map Site		1	1	2	2	3	3	4	4	5	5			
EMS Site		MB05TAS001		MB05TBS001		MB05TBS016		MB05TBS003		MB05TBS017				
Site		WQ0381	WQ0381	WQ0382	WQ0382	WQ0091	WQ0091	WQ0420	WQ0420	WQ 2275	WQ 2275	Mean	Standard Deviation	Count
Sample Integrated except as noted		# 1	# 2	# 1	# 2	# 1	# 2	# 1 East	# 2 West	# 1 North	# 2 South			
Date Sampled		06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	07/06/2003	06/15/2003	06/15/2003	06/15/2003	06/15/2003			
Pesticides														
Pentachlorophenol	ug/L	0.05	-	0.15	-	0.03	-	< 0.02	-	< 0.02	-	0.054	0.055	5
2,4-D	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
2,4-DB	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
2,4-DP	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
2,4,5-TP	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
Bromoxynil	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Dicamba	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Dinoseb	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
Fenoxaprop	ug/L	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	None	5
MCPA	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
MCPP	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
Picloram	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Quizalofop	ug/L	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	None	5
Trichlopyr	ug/L	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	None	5
Aldrin	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
alpha-BHC	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
beta-BHC	ug/L	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	None	5
delta-BHC	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
gamma-BHC (Lindane)	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
alpha-Chlordane	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
gamma-Chlordane	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
p,p-DDD	ug/L	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	-	< 0.03	None	5
o,p-DDE	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
p,p-DDE	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
p,p-DDT	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
Dieldrin	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Endosulfan I	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
Endrin	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Heptachlor	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Heptachlor Epoxide	ug/L	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	-	< 0.01	None	5
Methoxychlor	ug/L	< 0.04	-	< 0.04	-	< 0.04	-	< 0.04	-	< 0.04	-	< 0.04	None	5
Mirex	ug/L	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	-	< 0.02	None	5
Carbofuran	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Propoxur	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Alachlor	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Atrazine	ug/L	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	None	5
Bromacil	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Metribuzin	ug/L	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	None	5
Simazine	ug/L	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	None	5

Table 3. Historical water chemistry for Wekusko Lake from 1976 through1984 plus one sample from 1999.

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Temperature	Bacteria Fecal Coliform CFU /100mL	pH Laboratory	pH Field	Specific Conductivity Laboratory	Specific Conductivity Field	Solids Total Dissolved	Solids Total Suspended	Turbidity
					°C		pH units	pH units	uS/cm	uS/cm	mg/L	mg/L	NTU
Taylor Bay	1	MB05TAS001	WQ0381	2/8/1978	0.0	< 10	7.75	---	161	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/8/1978	0.0	< 10	7.80	7.70	163	160	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/6/1978	10.0	< 10	8.00	8.05	141	305	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/11/1978	17.5	< 10	8.00	7.95	148	145	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/16/1978	20.0	< 10	8.20	7.30	143	140	---	12	---
Taylor Bay	1	MB05TAS001	WQ0381	9/12/1978	13.0	< 10	8.10	7.95	146	155	---	5	---
Taylor Bay	1	MB05TAS001	WQ0381	10/17/1978	6.0	< 10	7.80	7.95	141	140	---	6	---
Taylor Bay	1	MB05TAS001	WQ0381	1/10/1979	---	< 10	8.00	---	155	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	2/6/1979	---	< 10	7.85	---	160	---	---	7	---
Taylor Bay	1	MB05TAS001	WQ0381	3/7/1979	---	< 10	7.80	---	158	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	6/14/1979	12.0	< 10	7.80	---	140	125	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	7/10/1979	22.5	< 10	8.10	---	139	140	---	6	---
Taylor Bay	1	MB05TAS001	WQ0381	8/15/1979	16.5	< 10	7.90	---	139	232	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	10/16/1979	6.5	< 10	7.95	---	140	136	---	12	---
Taylor Bay	1	MB05TAS001	WQ0381	1/8/1980	0.0	< 10	7.80	---	153	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	2/13/1980	---	< 10	7.70	---	151	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	3/11/1980	---	< 10	7.60	---	151	---	---	6	---
Taylor Bay	1	MB05TAS001	WQ0381	6/11/1980	16.0	< 10	8.20	---	153	125	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	7/9/1980	23.0	< 10	8.00	8.05	146	135	---	16	---
Taylor Bay	1	MB05TAS001	WQ0381	8/12/1980	19.0	< 10	8.25	8.20	146	135	---	6	---
Taylor Bay	1	MB05TAS001	WQ0381	9/11/1980	15.0	< 10	8.00	---	158	140	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	1/21/1981	0.0	< 10	8.40	---	153	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	2/19/1981	0.0	< 10	7.90	---	150	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	3/17/1981	---	< 10	8.10	---	153	---	---	< 5	---
Taylor Bay	1	MB05TAS001	WQ0381	6/3/1981	10.5	< 10	7.85	7.89	159	---	---	< 5	1.50
Taylor Bay	1	MB05TAS001	WQ0381	7/29/1981	18.5	< 10	8.32	8.10	151	147	---	< 5	1.00
Taylor Bay	1	MB05TAS001	WQ0381	10/6/1981	8.0	< 10	8.59	8.73	156	145	---	< 5	4.00
Taylor Bay	1	MB05TAS001	WQ0381	1/12/1982	0.0	< 10	7.95	---	165	---	---	< 5	0.85
Taylor Bay	1	MB05TAS001	WQ0381	2/9/1982	0.0	< 10	7.80	---	171	---	---	< 5	0.70
Taylor Bay	1	MB05TAS001	WQ0381	3/10/1982	---	< 10	7.60	---	169	---	---	< 5	0.70
Taylor Bay	1	MB05TAS001	WQ0381	6/9/1982	11.5	< 10	8.05	---	142	147	---	< 5	1.00
Taylor Bay	1	MB05TAS001	WQ0381	7/8/1982	---	< 10	8.00	---	148	---	---	< 5	1.50
Taylor Bay	1	MB05TAS001	WQ0381	8/17/1982	---	< 10	8.10	---	150	---	---	< 5	1.50
Taylor Bay	1	MB05TAS001	WQ0381	7/5/1983	16.0	< 10	7.90	---	150	154	---	< 5	1.50
Taylor Bay	1	MB05TAS001	WQ0381	8/23/1983	16.5	< 10	8.15	---	152	167	---	< 5	1.00
Taylor Bay	1	MB05TAS001	WQ0381	9/21/1983	9.0	< 10	8.20	---	152	149	---	< 5	2.00
Taylor Bay	1	MB05TAS001	WQ0381	1/11/1984	0.0	< 10	7.25	---	159	---	---	< 5	1.00
Taylor Bay	1	MB05TAS001	WQ0381	2/7/1984	0.0	< 10	7.80	---	164	---	---	< 5	1.00
Taylor Bay	1	MB05TAS001	WQ0381	3/6/1984	0.0	< 10	7.80	---	164	---	---	< 5	0.85
Anderson Bay	2	MB05TBS001	WQ0382	2/8/1978	0.0	< 10	7.85	---	171	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/8/1978	0.0	< 10	8.00	7.60	170	145	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/6/1978	11.0	< 10	7.90	7.95	139	260	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/11/1978	18.5	< 10	7.90	7.85	149	140	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/16/1978	20.0	< 10	8.65	7.45	144	130	---	14	---
Anderson Bay	2	MB05TBS001	WQ0382	9/12/1978	12.0	< 10	8.00	7.45	151	160	---	10	---
Anderson Bay	2	MB05TBS001	WQ0382	10/17/1978	5.0	< 10	7.75	6.25	146	140	---	6	---
Anderson Bay	2	MB05TBS001	WQ0382	1/10/1979	---	< 10	8.35	---	167	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	2/6/1979	---	< 10	7.90	---	161	---	---	6	---
Anderson Bay	2	MB05TBS001	WQ0382	3/7/1979	---	< 10	7.70	---	157	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	6/14/1979	13.0	< 10	7.70	---	136	125	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	7/10/1979	22.5	< 10	7.90	---	139	140	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	8/15/1979	15.0	< 10	8.00	---	140	246	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	10/16/1979	4.0	< 10	7.80	---	143	144	---	12	---
Anderson Bay	2	MB05TBS001	WQ0382	1/8/1980	0.0	< 10	8.00	---	161	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	2/13/1980	---	< 10	7.60	---	153	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	3/11/1980	---	< 10	7.65	---	161	---	---	6	---
Anderson Bay	2	MB05TBS001	WQ0382	6/11/1980	16.5	< 10	8.20	---	154	130	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	7/9/1980	19.0	< 10	8.00	8.45	142	140	---	8	---
Anderson Bay	2	MB05TBS001	WQ0382	8/12/1980	19.5	< 10	8.20	8.30	147	135	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	9/11/1980	15.5	< 10	7.50	---	155	130	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	1/21/1981	0.0	< 10	7.10	---	199	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	2/19/1981	0.0	< 10	7.70	---	159	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	3/17/1981	---	< 10	7.80	---	152	---	---	< 5	---
Anderson Bay	2	MB05TBS001	WQ0382	6/3/1981	12.0	< 10	7.87	7.90	159	---	---	< 5	1.50
Anderson Bay	2	MB05TBS001	WQ0382	7/29/1981	19.0	< 10	8.15	7.94	160	155	---	< 5	1.50
Anderson Bay	2	MB05TBS001	WQ0382	10/6/1981	8.0	< 10	8.49	8.58	175	159	---	< 5	3.00
Anderson Bay	2	MB05TBS001	WQ0382	1/12/1982	0.0	---	7.30	---	216	---	---	< 5	2.00
Anderson Bay	2	MB05TBS001	WQ0382	2/9/1982	0.0	< 10	7.75	---	180	---	---	< 5	0.50
Anderson Bay	2	MB05TBS001	WQ0382	3/10/1982	---	< 10	7.75	---	173	---	---	< 5	0.60
Anderson Bay	2	MB05TBS001	WQ0382	6/9/1982	11.5	< 10	8.00	---	144	147	---	< 5	1.00
Anderson Bay	2	MB05TBS001	WQ0382	7/8/1982	---	< 10	8.00	---	172	---	---	< 5	1.50
Anderson Bay	2	MB05TBS001	WQ0382	8/17/1982	---	< 10	8.25	---	154	---	---	< 5	1.30
Anderson Bay	2	MB05TBS001	WQ0382	7/5/1983	16.0	< 10	8.10	---	149	154	---	< 5	1.50

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Temperature	Bacteria	pH		Specific Conductivity		Solids		Turbidity
						Fecal Coliform	Laboratory	Field	Laboratory	Field	Total Dissolved	Total Suspended	
					°C	CFU /100mL	pH units	pH units	uS/cm	uS/cm	mg/L	mg/L	NTU
Anderson Bay	2	MB05TBS001	WQ0382	8/23/1983	17.0	< 10	8.30	---	160	183	---	< 5	1.50
Anderson Bay	2	MB05TBS001	WQ0382	9/21/1983	13.0	< 10	8.05	---	176	155	---	< 5	1.50
Anderson Bay	2	MB05TBS001	WQ0382	1/11/1984	0.0	< 10	7.85	---	164	---	---	5	0.90
Anderson Bay	2	MB05TBS001	WQ0382	3/6/1984	0.0	< 10	7.65	---	165	---	---	< 5	0.80
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	1/27/1976	---	< 10	8.10	---	171	---	120	< 5	1.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	2/18/1976	---	< 10	7.60	---	170	---	126	< 5	1.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/18/1976	0.0	< 10	7.60	---	181	---	109	7	0.50
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	6/29/1976	---	< 10	8.00	---	140	---	77	11	1.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/26/1976	---	< 10	8.05	---	139	---	88	< 5	1.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1976	---	< 10	8.25	---	139	---	96	< 5	2.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/22/1976	---	---	7.95	---	150	---	72	18	4.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/13/1976	---	< 10	8.10	---	144	---	89	7	2.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/1/1977	0.0	< 10	7.80	---	162	---	170	< 5	0.60
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	5/31/1977	---	< 10	8.15	---	149	---	75	9	1.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/12/1977	20.0	< 10	8.30	---	143	---	98	< 5	1.40
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1977	14.0	< 10	8.30	---	144	---	84	6	3.00
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/20/1977	11.5	< 10	7.90	---	144	---	99	5	3.40
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1977	8.5	< 10	8.05	---	198	---	96	< 5	1.50
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	2/8/1978	0.0	< 10	7.80	---	171	---	---	---	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/8/1978	0.0	< 10	7.80	7.25	170	95	---	---	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	6/6/1978	11.5	< 10	8.00	7.95	141	135	---	---	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/11/1978	20.0	< 10	7.90	8.20	146	140	---	---	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/16/1978	21.0	< 10	8.45	7.70	146	135	---	7	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/12/1978	12.5	< 10	8.10	7.65	148	150	---	11	---
Bhwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1978	5.0	< 10	7.80	6.75	140	135	---	10	---
Herb Bay	4	MB05TBS003	WQ0420	1/10/1979	---	< 10	7.70	---	137	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	2/6/1979	---	< 10	7.70	---	154	---	---	10	---
Herb Bay	4	MB05TBS003	WQ0420	3/7/1979	---	< 10	7.10	---	134	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	6/14/1979	14.0	< 10	7.75	---	116	110	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	7/10/1979	22.5	< 10	8.10	---	136	150	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	8/15/1979	14.5	< 10	7.90	---	85.2*	249	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	10/16/1979	6.0	< 10	8.00	---	141	137	---	9	---
Herb Bay	4	MB05TBS003	WQ0420	1/8/1980	0.0	< 10	7.70	---	161	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	2/12/1980	---	< 10	7.62	---	158	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	3/11/1980	---	< 10	7.75	---	162	---	---	5	---
Herb Bay	4	MB05TBS003	WQ0420	6/11/1980	15.0	< 10	7.90	---	148	125	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	7/9/1980	20.0	< 10	8.00	8.45	145	140	---	7	---
Herb Bay	4	MB05TBS003	WQ0420	8/12/1980	18.0	< 10	8.35	8.00	144	140	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	9/11/1980	16.0	< 10	8.10	---	158	145	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	1/21/1981	0.0	< 10	7.80	---	128	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	2/19/1981	0.0	< 10	7.10	---	124	---	---	< 5	---
Herb Bay	4	MB05TBS003	WQ0420	3/17/1981	---	< 10	7.30	---	119	---	---	5	---
Herb Bay	4	MB05TBS003	WQ0420	6/3/1981	12.0	< 10	7.90	7.99	159	222	---	< 5	1.00
Herb Bay	4	MB05TBS003	WQ0420	7/29/1981	19.0	< 10	8.05	7.97	148	145	---	< 5	2.00
Herb Bay	4	MB05TBS003	WQ0420	10/6/1981	9.5	< 10	8.39	8.79	155	144	---	< 5	15.00
Herb Bay	4	MB05TBS003	WQ0420	1/12/1982	0.0	< 10	7.45	---	154	---	---	< 5	1.50
Herb Bay	4	MB05TBS003	WQ0420	2/9/1982	0.0	< 10	7.70	---	176	---	---	< 5	0.65
Herb Bay	4	MB05TBS003	WQ0420	3/10/1982	---	< 10	7.20	---	171	---	---	< 5	0.80
Herb Bay	4	MB05TBS003	WQ0420	6/9/1982	11.5	< 10	8.05	---	134	140	---	< 5	1.00
Herb Bay	4	MB05TBS003	WQ0420	7/8/1982	---	< 10	8.00	---	143	---	---	< 5	0.90
Herb Bay	4	MB05TBS003	WQ0420	8/17/1982	---	< 10	8.35	---	146	---	---	< 5	1.00
Herb Bay	4	MB05TBS003	WQ0420	7/5/1983	15.0	< 10	7.85	---	146	149	---	< 5	1.00
Herb Bay	4	MB05TBS003	WQ0420	8/23/1983	17.0	< 10	7.80	---	143	159	---	< 5	1.00
Herb Bay	4	MB05TBS003	WQ0420	9/21/1983	15.0	< 10	7.95	---	144	135	---	< 5	1.50
Herb Bay	4	MB05TBS003	WQ0420	1/11/1984	0.0	< 10	7.85	---	161	---	---	< 5	0.65
Herb Bay	4	MB05TBS003	WQ0420	3/6/1984	0.0	< 10	7.15	---	150	---	---	< 5	1.00
Herb Lake Landing	5	MB05TBS017	WQ2275	7/29/1999	---	< 10	8.18		166	---	140	8	2.20
Mean					9.8	< 10	7.92	7.89	153	153	103	< 6	1.61
Standard Deviation					7.8	0	0.29	0.51	15	37	27	2	1.95
Count					94	128	130	33	129	61	15	118	58

*Anomaly

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Colour True Colour Units	Alkalinity Total $CaCO_3$ mg/L	Alkalinity Bicarbonate HCO3 mg/L	Alkalinity Carbonate CO_3 mg/L	Alkalinity Hydroxide OH mg/L	Hardness Total $CaCO_3$ mg/L	Oxygen O_2 Dissolved mg/L	Carbon C Total Organic mg/L	Carbon C Total Inorganic mg/L
Taylor Bay	1	MB05TAS001	WQ0381	2/8/1978	---	---	---	---	---	---	14.2	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/8/1978	---	---	---	---	---	---	13.4	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/6/1978	---	---	---	---	---	---	10.7	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/11/1978	---	---	---	---	---	---	9.1	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/16/1978	---	---	---	---	---	---	9.2	---	---
Taylor Bay	1	MB05TAS001	WQ0381	9/12/1978	---	---	---	---	---	---	10.4	---	---
Taylor Bay	1	MB05TAS001	WQ0381	10/17/1978	---	---	---	---	---	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/10/1979	---	---	---	---	---	---	14.4	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/6/1979	---	---	---	---	---	---	14.5	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/7/1979	---	---	---	---	---	---	13.9	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/14/1979	---	---	---	---	---	---	10.5	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/10/1979	---	---	---	---	---	---	9.1	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/15/1979	---	---	---	---	---	---	9.4	---	---
Taylor Bay	1	MB05TAS001	WQ0381	10/16/1979	---	---	---	---	---	---	11.8	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/8/1980	---	---	---	---	---	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/13/1980	---	---	---	---	---	---	13.6	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/11/1980	---	---	---	---	---	---	13.0	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/11/1980	---	70	85.4	< 0.5	< 0.5	---	10.0	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/9/1980	---	70	85	---	---	---	9.0	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/12/1980	---	70	85	< 0.5	< 0.5	---	8.9	---	---
Taylor Bay	1	MB05TAS001	WQ0381	9/11/1980	---	66	81	< 0.5	< 0.5	---	8.6	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/21/1981	---	312	376	< 0.5	< 0.5	---	13.5	16.5	17.5
Taylor Bay	1	MB05TAS001	WQ0381	2/19/1981	---	74	90.3	< 0.5	< 0.5	---	13.7	16.0	17.0
Taylor Bay	1	MB05TAS001	WQ0381	3/17/1981	---	78	95	< 0.5	< 0.5	---	12.0	15.0	18.5
Taylor Bay	1	MB05TAS001	WQ0381	6/3/1981	---	68	83	< 0.5	< 0.5	---	11.8	13.0	16.0
Taylor Bay	1	MB05TAS001	WQ0381	7/29/1981	---	72.6	84.7	1.92	< 0.5	---	8.6	13.0	16.0
Taylor Bay	1	MB05TAS001	WQ0381	10/6/1981	---	71.8	77.3	5.04	< 0.5	---	11.1	12.0	15.5
Taylor Bay	1	MB05TAS001	WQ0381	1/12/1982	---	76	92.7	< 0.5	< 0.5	---	14.3	13.0	16.0
Taylor Bay	1	MB05TAS001	WQ0381	2/9/1982	---	75	91.5	< 0.5	< 0.5	---	---	14.0	18.0
Taylor Bay	1	MB05TAS001	WQ0381	3/10/1982	---	80	97.6	< 0.5	< 0.5	---	13.2	13.5	18.0
Taylor Bay	1	MB05TAS001	WQ0381	6/8/1982	---	70	85.4	< 0.5	< 0.5	---	8.8	13.0	14.5
Taylor Bay	1	MB05TAS001	WQ0381	7/8/1982	---	67	81.7	< 0.5	< 0.5	---	8.5	13.0	13.5
Taylor Bay	1	MB05TAS001	WQ0381	8/17/1982	---	68	83	< 0.5	< 0.5	---	9.0	11.5	13.5
Taylor Bay	1	MB05TAS001	WQ0381	7/5/1983	---	70	85.4	< 0.5	< 0.5	---	9.3	16.0	16.0
Taylor Bay	1	MB05TAS001	WQ0381	8/23/1983	---	70	85.4	< 0.5	< 0.5	---	10.0	15.5	14.0
Taylor Bay	1	MB05TAS001	WQ0381	9/21/1983	---	68	83	< 0.5	< 0.5	---	10.1	10.5	16.5
Taylor Bay	1	MB05TAS001	WQ0381	1/11/1984	---	72	87.8	< 0.5	< 0.5	---	14.9	18.0	16.5
Taylor Bay	1	MB05TAS001	WQ0381	2/7/1984	---	74	90.3	< 0.5	< 0.5	---	12.7	19.0	20.0
Taylor Bay	1	MB05TAS001	WQ0381	3/6/1984	---	75	91.5	< 0.5	< 0.5	---	12.8	12.5	14.5
Anderson Bay	2	MB05TBS001	WQ0382	2/8/1978	---	---	---	---	---	---	14.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/8/1978	---	---	---	---	---	---	13.9	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/6/1978	---	---	---	---	---	---	10.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/11/1978	---	---	---	---	---	---	8.7	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/16/1978	---	---	---	---	---	---	9.6	---	---
Anderson Bay	2	MB05TBS001	WQ0382	9/12/1978	---	---	---	---	---	---	9.7	---	---
Anderson Bay	2	MB05TBS001	WQ0382	10/17/1978	---	---	---	---	---	---	10.9	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/10/1979	---	---	---	---	---	---	14.0	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/6/1979	---	---	---	---	---	---	14.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/7/1979	---	---	---	---	---	---	12.6	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/14/1979	---	---	---	---	---	---	10.2	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/10/1979	---	---	---	---	---	---	8.7	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/15/1979	---	---	---	---	---	---	9.3	---	---
Anderson Bay	2	MB05TBS001	WQ0382	10/16/1979	---	---	---	---	---	---	10.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/8/1980	---	---	---	---	---	---	16.0	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/13/1980	---	---	---	---	---	---	14.1	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/11/1980	---	---	---	---	---	---	14.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/11/1980	---	70	85.4	< 0.5	< 0.5	---	9.8	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/9/1980	---	68	83	---	---	---	9.5	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/12/1980	---	70	85	< 0.5	< 0.5	---	8.5	---	---
Anderson Bay	2	MB05TBS001	WQ0382	9/11/1980	---	54	66	< 0.5	< 0.5	---	8.4	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/21/1981	---	97	118	< 0.5	< 0.5	---	2.3	19.5	26.5
Anderson Bay	2	MB05TBS001	WQ0382	2/19/1981	---	78	95.2	< 0.5	< 0.5	---	13.6	16.0	17.5
Anderson Bay	2	MB05TBS001	WQ0382	3/17/1981	---	76	93	< 0.5	< 0.5	---	---	16.0	18.5
Anderson Bay	2	MB05TBS001	WQ0382	6/3/1981	---	66	80.5	< 0.5	< 0.5	---	10.3	15.0	15.5
Anderson Bay	2	MB05TBS001	WQ0382	7/29/1981	---	67.5	82.4	< 0.5	< 0.5	---	8.5	13.0	15.0
Anderson Bay	2	MB05TBS001	WQ0382	10/6/1981	---	72	82.5	2.64	< 0.5	---	11.0	12.0	15.5
Anderson Bay	2	MB05TBS001	WQ0382	1/12/1982	---	90	110	< 0.5	< 0.5	---	---	14.5	21.5
Anderson Bay	2	MB05TBS001	WQ0382	2/9/1982	---	80	97.6	< 0.5	< 0.5	---	---	18.0	19.0
Anderson Bay	2	MB05TBS001	WQ0382	3/10/1982	---	79	96.4	< 0.5	< 0.5	---	12.5	15.5	18.5
Anderson Bay	2	MB05TBS001	WQ0382	6/8/1982	---	64	78.1	< 0.5	< 0.5	---	7.8	14.0	13.0
Anderson Bay	2	MB05TBS001	WQ0382	7/8/1982	---	67	81.7	< 0.5	< 0.5	---	8.6	13.0	12.5
Anderson Bay	2	MB05TBS001	WQ0382	8/17/1982	---	69	84.2	< 0.5	< 0.5	---	8.8	11.5	13.5
Anderson Bay	2	MB05TBS001	WQ0382	7/5/1983	---	68	83	< 0.5	< 0.5	---	9.1	14.5	15.5

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Colour True Colour Units	Alkalinity Total $CaCO_3$ mg/L	Alkalinity Bicarbonate HCO_3 mg/L	Alkalinity Carbonate CO_3 mg/L	Alkalinity Hydroxide OH mg/L	Hardness Total $CaCO_3$ mg/L	Oxygen O_2 Dissolved mg/L	Carbon C Total Organic mg/L	Carbon C Total Inorganic mg/L
Anderson Bay	2	MB05TBS001	WQ0382	8/23/1983	---	70	85.4	< 0.5	< 0.5	---	10.7	16.5	13.5
Anderson Bay	2	MB05TBS001	WQ0382	9/21/1983	---	68	83	< 0.5	< 0.5	---	10.0	13.0	15.5
Anderson Bay	2	MB05TBS001	WQ0382	1/11/1984	---	75	91.5	< 0.5	< 0.5	---	---	15.0	17.0
Anderson Bay	2	MB05TBS001	WQ0382	3/6/1984	---	74	90.3	< 0.5	< 0.5	---	13.9	14.0	14.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	1/27/1976	8	94	115	< 0.5	< 0.5	80.8	---	10.5	17.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	2/16/1976	6	94	115	< 0.5	< 0.5	84.8	---	13.5	20.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	3/16/1976	8	84	102	< 0.5	< 0.5	83	---	13.0	19.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	6/29/1976	5	68	83	< 0.5	< 0.5	70.5	---	12.0	13.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	7/26/1976	10	63	76.9	< 0.5	< 0.5	79	---	13.5	19.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	8/17/1976	5	64	78.1	< 0.5	< 0.5	66.5	---	12.0	17.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	9/22/1976	5	68	83	< 0.5	< 0.5	70.5	---	14.0	14.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	10/13/1976	10	67	81.7	< 0.5	< 0.5	70.5	---	11.0	14.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	3/1/1977	< 5	76	92.7	< 0.5	< 0.5	70.5	---	15.0	18.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	5/31/1977	< 5	64	78.1	< 0.5	< 0.5	121	9.5	12.5	16.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	7/12/1977	< 5	64	78.1	< 0.5	< 0.5	83	9.0	12.5	15.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	8/17/1977	< 5	66	80.5	< 0.5	< 0.5	69	9.9	13.5	15.0
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	9/20/1977	10	68	83	< 0.5	< 0.5	72.6	9.7	12.5	15.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	10/17/1977	10	68	83	< 0.5	< 0.5	68	9.9	16.5	16.5
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	2/8/1978	---	---	---	---	---	---	14.8	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	3/8/1978	---	---	---	---	---	---	14.4	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	6/6/1978	---	---	---	---	---	---	---	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	7/11/1978	---	---	---	---	---	---	8.9	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	8/16/1978	---	---	---	---	---	---	9.3	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	9/12/1978	---	---	---	---	---	---	9.7	---	---
Btwn Woosey Is. & Wedge Pt.	3	MB05TBS016	WQ0091	10/17/1978	---	---	---	---	---	---	11.0	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/10/1979	---	---	---	---	---	---	14.6	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/6/1979	---	---	---	---	---	---	15.0	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/7/1979	---	---	---	---	---	---	13.0	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/14/1979	---	---	---	---	---	---	10.4	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/10/1979	---	---	---	---	---	---	9.1	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/15/1979	---	---	---	---	---	---	9.0	---	---
Herb Bay	4	MB05TBS003	WQ0420	10/16/1979	---	---	---	---	---	---	10.0	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/8/1980	---	---	---	---	---	---	15.3	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/12/1980	---	---	---	---	---	---	12.3	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/11/1980	---	---	---	---	---	---	13.6	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/11/1980	---	64	78.1	< 0.5	< 0.5	---	10.1	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/9/1980	---	68	83	---	---	---	9.6	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/12/1980	---	70	81	< 0.5	< 0.5	---	9.5	---	---
Herb Bay	4	MB05TBS003	WQ0420	9/11/1980	---	68	83	< 0.5	< 0.5	---	9.1	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/21/1981	---	56	68	< 0.5	< 0.5	---	12.9	20.5	13.5
Herb Bay	4	MB05TBS003	WQ0420	2/19/1981	---	52	63.4	< 0.5	< 0.5	---	13.3	22.5	12.5
Herb Bay	4	MB05TBS003	WQ0420	3/17/1981	---	52	63	< 0.5	< 0.5	---	12.1	20.0	13.0
Herb Bay	4	MB05TBS003	WQ0420	6/3/1981	---	74	91	< 0.5	< 0.5	---	11.8	14.5	16.0
Herb Bay	4	MB05TBS003	WQ0420	7/29/1981	---	66.5	81.1	< 0.5	< 0.5	---	8.7	13.0	15.0
Herb Bay	4	MB05TBS003	WQ0420	10/6/1981	---	68	77.6	< 0.5	< 0.5	---	10.8	13.0	15.0
Herb Bay	4	MB05TBS003	WQ0420	1/12/1982	---	61	74.4	< 0.5	< 0.5	---	15.3	17.0	13.0
Herb Bay	4	MB05TBS003	WQ0420	2/8/1982	---	76	92.7	< 0.5	< 0.5	---	13.6	14.5	20.0
Herb Bay	4	MB05TBS003	WQ0420	3/10/1982	---	69	84.2	< 0.5	< 0.5	---	10.2	19.0	17.0
Herb Bay	4	MB05TBS003	WQ0420	6/9/1982	---	61	74.4	< 0.5	< 0.5	---	8.6	13.5	12.0
Herb Bay	4	MB05TBS003	WQ0420	7/8/1982	---	66	80.5	< 0.5	< 0.5	---	8.4	12.5	12.5
Herb Bay	4	MB05TBS003	WQ0420	8/17/1982	---	67	79.3	< 0.5	< 0.5	---	9.1	11.0	12.5
Herb Bay	4	MB05TBS003	WQ0420	7/5/1983	---	66	80.5	< 0.5	< 0.5	---	8.7	13.0	15.5
Herb Bay	4	MB05TBS003	WQ0420	8/23/1983	---	66	80.5	< 0.5	< 0.5	---	8.2	15.5	13.5
Herb Bay	4	MB05TBS003	WQ0420	9/21/1983	---	64	78.1	< 0.5	< 0.5	---	8.2	12.0	15.0
Herb Bay	4	MB05TBS003	WQ0420	1/11/1984	---	72	87.8	< 0.5	< 0.5	---	18.8	13.5	15.5
Herb Bay	4	MB05TBS003	WQ0420	3/6/1984	---	57	69.5	< 0.5	< 0.5	---	10.4	16.5	12.0
Herb Lake Landing	5	MB05TBS017	WQ2275	7/29/1999	15	71	87	< 20	< 10	76.7	9.1	---	---
Mean					7.5	73.2	88.8	< 0.9	< 0.6	77.8	11.0	14.4	14.4
Standard Deviation					3.0	28.4	34.2	2.3	1.1	13.4	2.5	2.5	2.5
Count					15	79	79	76	76	15	113	66	66

1 Analytical limits for chloride and sulphate too high in 1999 and data left out of calculations

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Nitrogen N			Phosphorus P		Chloride Cl	Fluoride F	Sulphate SO_4
					Ammonia	Nitrate & Nitrite	Total Kjeldahl	Total	Ortho	Dissolved		Dissolved
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Taylor Bay	1	MB05TAS001	WQ0381	2/8/1978	---	0.21	0.35	< 0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/8/1978	---	0.14	0.45	< 0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/6/1978	---	0.09	0.40	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/11/1978	---	0.38	0.60	0.021	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/16/1978	---	< 0.01	0.40	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	9/12/1978	---	0.07	0.55	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	10/17/1978	---	0.01	0.45	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/10/1979	---	0.08	0.50	0.017	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/6/1979	---	0.06	0.45	0.017	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/7/1979	---	0.09	0.40	0.011	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/14/1979	---	< 0.01	0.35	< 0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/10/1979	---	< 0.01	0.40	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/15/1979	---	< 0.01	0.35	0.013	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	10/16/1979	---	0.01	0.40	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/8/1980	---	0.22	0.40	< 0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/13/1980	---	0.07	0.50	0.008	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/11/1980	---	0.06	0.50	0.017	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/11/1980	---	< 0.01	0.30	0.015	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/9/1980	---	< 0.01	0.50	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/12/1980	---	< 0.01	0.50	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	9/11/1980	---	< 0.01	0.50	0.021	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/21/1981	---	0.04	0.40	---	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/19/1981	---	0.06	0.40	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/17/1981	---	0.06	0.40	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/3/1981	---	< 0.01	0.50	0.050	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/29/1981	---	0.01	0.50	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	10/6/1981	---	< 0.01	0.60	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/12/1982	---	< 0.01	0.40	0.010	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/9/1982	---	0.04	0.40	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/10/1982	---	---	0.40	0.010	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	6/9/1982	---	< 0.01	0.40	0.018	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/8/1982	---	< 0.01	0.50	0.021	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/17/1982	---	< 0.01	0.60	0.040	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	7/5/1983	---	< 0.01	0.70	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	8/23/1983	---	< 0.01	0.60	0.025	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	9/21/1983	---	< 0.01	0.60	0.030	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	1/11/1984	---	0.02	0.60	0.010	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	2/7/1984	---	0.03	0.50	0.020	---	---	---	---
Taylor Bay	1	MB05TAS001	WQ0381	3/6/1984	---	0.06	0.45	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/8/1978	---	0.39	0.60	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/8/1978	---	0.19	0.45	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/6/1978	---	0.63	0.45	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/11/1978	---	0.76	0.50	0.023	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/16/1978	---	< 0.01	0.60	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	9/12/1978	---	0.17	0.80	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	10/17/1978	---	< 0.01	0.45	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/10/1979	---	0.02	0.60	0.013	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/6/1979	---	0.10	0.60	0.015	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/7/1979	---	0.07	0.40	0.010	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/14/1979	---	< 0.01	0.40	< 0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/10/1979	---	< 0.01	0.50	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/15/1979	---	< 0.01	0.40	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	10/16/1979	---	0.01	0.40	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/8/1980	---	0.17	0.45	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/13/1980	---	0.05	0.50	0.021	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/11/1980	---	0.06	0.60	0.041	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/11/1980	---	< 0.01	0.40	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/9/1980	---	0.01	0.70	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/12/1980	---	< 0.01	0.45	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	9/11/1980	---	< 0.01	0.50	0.023	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/21/1981	---	0.01	0.50	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/19/1981	---	0.06	0.50	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/17/1981	---	0.06	0.40	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/3/1981	---	< 0.01	0.50	0.050	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/29/1981	---	0.01	0.50	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	10/6/1981	---	< 0.01	0.60	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/12/1982	---	< 0.01	0.60	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	2/9/1982	---	0.05	0.50	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/10/1982	---	0.04	< 0.40	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	6/9/1982	---	< 0.01	0.40	0.026	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/8/1982	---	< 0.01	0.55	0.029	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	8/17/1982	---	< 0.01	0.60	0.040	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	7/5/1983	---	< 0.01	0.80	0.020	---	---	---	---

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Nitrogen N			Phosphorus P		Chloride Cl	Fluoride F	Sulphate SO_4
					Ammonia	Nitrate & Nitrite	Total Kjeldahl	Total	Ortho	Dissolved		Dissolved
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Anderson Bay	2	MB05TBS001	WQ0382	8/23/1983	---	< 0.01	0.70	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	9/21/1983	---	< 0.01	0.65	0.030	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	1/11/1984	---	0.01	0.50	0.020	---	---	---	---
Anderson Bay	2	MB05TBS001	WQ0382	3/6/1984	---	0.05	0.40	0.010	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	1/27/1976	0.03	0.02	0.50	< 0.020	< 0.020	2	0.1	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	2/16/1976	0.07	0.12	0.60	< 0.020	< 0.020	3	0.1	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/16/1976	0.02	0.09	0.40	0.030	< 0.020	3	0.08	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/29/1976	0.02	0.01	0.50	< 0.020	< 0.020	2	0.09	< 5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/26/1976	< 0.02	< 0.01	0.40	0.020	< 0.020	2	0.07	10
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1976	0.02	0.01	0.40	0.020	< 0.020	2	0.06	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/22/1976	0.21	0.31	0.50	0.040	< 0.020	2	0.08	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/13/1976	< 0.02	< 0.01	0.40	0.020	< 0.020	< 2	0.07	< 5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/1/1977	---	0.05	---	< 0.020	---	3	---	10
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	5/31/1977	---	0.13	---	0.020	---	4	---	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/12/1977	---	0.03	---	0.020	0.008	< 2	---	< 5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1977	---	0.29	---	0.039	---	2	---	5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/20/1977	---	0.03	---	0.031	---	2	---	< 5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1977	---	< 0.01	---	0.024	---	2.5	---	< 5
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	2/8/1978	---	0.13	0.40	< 0.020	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	3/8/1978	---	0.18	0.45	< 0.020	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	6/6/1978	---	0.07	0.45	0.030	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	7/11/1978	---	0.35	0.50	0.026	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	8/16/1978	---	< 0.01	0.50	0.030	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	9/12/1978	---	< 0.01	0.70	0.030	---	---	---	---
Btwn Woosey Is. & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1978	---	< 0.01	0.60	0.030	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/10/1979	---	0.08	0.60	0.018	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/6/1979	---	0.19	0.80	0.030	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/7/1979	---	0.24	0.55	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/14/1979	---	< 0.01	0.40	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/10/1979	---	< 0.01	0.60	0.030	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/15/1979	---	< 0.01	0.35	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	10/16/1979	---	0.02	0.40	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/8/1980	---	0.31	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/12/1980	---	< 0.01	0.50	0.008	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/11/1980	---	0.03	0.50	0.025	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/11/1980	---	< 0.01	0.40	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/8/1980	---	< 0.01	0.60	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/12/1980	---	< 0.01	0.45	0.030	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	9/11/1980	---	< 0.01	0.50	0.026	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/21/1981	---	0.06	0.60	0.070	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/19/1981	---	0.16	0.70	0.030	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/17/1981	---	0.20	0.60	0.050	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/3/1981	---	< 0.01	0.50	0.050	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/29/1981	---	< 0.01	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	10/6/1981	---	< 0.01	1.40	0.080	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/12/1982	---	0.05	0.60	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	2/9/1982	---	0.02	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/10/1982	---	0.14	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	6/9/1982	---	< 0.01	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/8/1982	---	< 0.01	0.45	0.014	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/17/1982	---	< 0.01	0.60	0.040	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	7/5/1983	---	< 0.01	0.80	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	8/23/1983	---	< 0.01	0.60	0.025	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	9/21/1983	---	0.01	0.60	0.040	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	1/11/1984	---	< 0.01	0.50	0.020	---	---	---	---
Herb Bay	4	MB05TBS003	WQ0420	3/6/1984	---	0.11	0.55	0.020	---	---	---	---
Herb Lake Landing	5	MB05TBS017	WQ2275	7/29/1999	0.01	< 0.01	0.50	0.028	---	< 10[1]	---	< 10[1]
Mean					0.05	0.07	0.51	0.025	0.019	2.900	0.081	6.071
Standard Deviation					0.06	0.11	0.13	0.011	0.004	2.055	0.015	2.129
Count					9	129	124	129	9	15	8	14

1. Analytical limits for chloride and sulphate too high in 1999 and data left out of calculations.

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Arsenic As Extractable or Total mg/L	Cadmium Cd Extractable or Total mg/L	Calcium Ca Extractable or Total mg/L	Chromium Cr Hexavalent mg/L	Copper Cu Extractable or Total mg/L	Iron Fe Extractable or Total mg/L	Lead Pb Extractable or Total mg/L	Mercry Hg Extractable ug/L
Taylor Bay	1	MB05TAS001	WQ0381	2/8/1978	< 0.005	< 0.005	---	---	< 0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/8/1978	< 0.005	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	6/6/1978	< 0.001	< 0.005	---	< 0.02	0.005	---	0.015	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/11/1978	< 0.001	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	8/16/1978	0.002	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	9/12/1978	0.001	< 0.005	---	< 0.02	< 0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	10/17/1978	0.001	< 0.005	---	< 0.02	< 0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	1/10/1979	0.001	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	2/6/1979	< 0.001	< 0.005	---	---	0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/7/1979	0.001	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	6/14/1979	< 0.001	0.005	---	---	0.012	---	0.010	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/10/1979	0.001	< 0.005	---	---	< 0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	8/15/1979	< 0.001	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	10/16/1979	0.003	0.005	---	---	0.005	---	0.020	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	1/8/1980	< 0.001	< 0.005	---	---	0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	2/13/1980	< 0.001	< 0.005	---	---	0.01	---	0.010	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/11/1980	< 0.001	< 0.005	---	---	0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	6/11/1980	0.003	< 0.005	13.0	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/9/1980	0.002	< 0.005	16.5	---	< 0.005	---	0.015	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	8/12/1980	0.002	< 0.005	13.0	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	9/11/1980	< 0.001	< 0.005	18.0	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	1/21/1981	< 0.001	< 0.005	13.0	---	0.01	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	2/19/1981	< 0.001	< 0.005	18.0	---	0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/17/1981	0.002	< 0.005	13.0	---	0.005	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	6/3/1981	< 0.001	< 0.005	18.0	---	0.025	---	0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/29/1981	0.001	< 0.005	18.0	---	0.039	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	10/6/1981	0.003	< 0.005	18.0	---	0.042	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	1/12/1982	0.001	< 0.005	18.0	---	0.041	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	2/9/1982	< 0.001	< 0.005	20.2	---	0.012	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/10/1982	0.002	< 0.005	19.0	---	0.099	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	6/9/1982	< 0.001	< 0.005	16.7	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/8/1982	0.001	< 0.005	16.2	---	0.04	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	8/17/1982	0.002	< 0.005	53.0	---	0.006	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	7/5/1983	0.001	< 0.0010	16.7	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	8/23/1983	0.002	< 0.0010	17.2	---	0.006	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	9/21/1983	< 0.001	< 0.0010	17.0	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	1/11/1984	< 0.001	< 0.0010	17.7	---	< 0.005	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	2/7/1984	0.002	0.001	18.7	---	0.006	---	< 0.005	< 0.02
Taylor Bay	1	MB05TAS001	WQ0381	3/6/1984	< 0.001	< 0.0010	19.0	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	2/8/1978	< 0.005	< 0.005	---	---	< 0.005	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	3/8/1978	< 0.005	< 0.005	---	< 0.02	0.01	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	6/6/1978	< 0.001	< 0.005	---	< 0.02	0.005	---	0.015	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/11/1978	< 0.001	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	8/16/1978	0.002	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	9/12/1978	0.002	< 0.005	---	< 0.02	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	10/17/1978	0.004	< 0.005	---	< 0.02	< 0.005	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	1/10/1979	0.002	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	2/6/1979	< 0.001	< 0.005	---	---	0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	3/7/1979	0.001	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	6/14/1979	0.001	0.005	---	---	0.012	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/10/1979	0.002	< 0.005	---	---	< 0.005	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	8/15/1979	0.002	< 0.005	---	---	< 0.005	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	10/16/1979	0.002	0.005	---	---	< 0.005	---	0.015	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	1/8/1980	0.001	< 0.005	---	---	0.005	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	2/13/1980	0.002	< 0.005	---	---	0.01	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	3/11/1980	< 0.001	< 0.005	---	---	0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	6/11/1980	0.003	< 0.005	13.0	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/9/1980	0.002	< 0.005	16.5	---	0.005	---	0.015	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	8/12/1980	0.001	< 0.005	13.0	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	9/11/1980	< 0.001	< 0.005	18.0	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	1/21/1981	0.001	< 0.005	20.0	---	0.01	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	2/19/1981	< 0.001	< 0.005	18.0	---	0.01	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	3/17/1981	0.003	< 0.005	13.0	---	0.005	---	0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	6/3/1981	< 0.001	< 0.005	18.0	---	< 0.005	---	0.010	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/29/1981	0.002	< 0.005	18.0	---	0.07	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	10/6/1981	0.003	< 0.005	20.0	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	1/12/1982	0.004	< 0.005	25.0	---	0.055	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	2/9/1982	0.001	< 0.005	21.5	---	0.13	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	3/10/1982	0.002	< 0.005	19.0	---	0.056	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	6/9/1982	0.001	< 0.005	17.4	---	< 0.005	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/8/1982	0.001	< 0.005	20.7	---	0.02	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	8/17/1982	0.002	< 0.005	5.0	---	0.04	---	< 0.005	< 0.02
Anderson Bay	2	MB05TBS001	WQ0382	7/5/1983	0.002	< 0.0010	16.7	---	< 0.005	---	< 0.005	< 0.02

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Arsenic As Extractable or Total mg/L	Cadmium Cd Extractable or Total mg/L	Calcium Ca Extractable or Total mg/L	Chromium Cr Hexavalent mg/L	Copper Cu Extractable or Total mg/L	Iron Fe Extractable or Total mg/L	Lead Pb Extractable or Total mg/L	Mercry Hg Extractable ug/L
Anderson Bay	2	MB05TBS001	WQ0382	8/23/1983	0 004	< 0 0010	19 3	---	< 0 005	---	< 0 005	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	9/21/1983	0 003	< 0 0010	22 2	---	0 006	---	< 0 005	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	1/11/1984	< 0 001	< 0 0010	18 4	---	< 0 005	---	< 0 005	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/6/1984	< 0 001	< 0 0010	19 0	---	< 0 005	---	< 0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	1/27/1976	< 0 040	< 0 005	17 5	---	< 0 005	0 02	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	2/16/1976	< 0 040	< 0 005	17 5	---	< 0 005	< 0 02	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/16/1976	< 0 040	< 0 005	20 0	---	< 0 005	< 0 02	0 010	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	6/29/1976	< 0 040	< 0 005	15 0	---	0 005	0 08	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/26/1976	< 0 040	< 0 005	20 0	---	0 019	0 06	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1976	< 0 040	< 0 005	15 0	---	< 0 005	0 15	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/22/1976	< 0 040	< 0 005	15 0	---	< 0 005	0 13	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/13/1976	< 0 040	< 0 005	15 0	---	< 0 005	0 05	0 010	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/1/1977	< 0 040	< 0 005	15 0	---	< 0 005	< 0 02	< 0 0100	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	5/31/1977	< 0 005	< 0 005	15 0	---	0 005	0 02	0 010	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/12/1977	0 008	< 0 005	20 0	---	0 005	< 0 02	< 0 005	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1977	< 0 005	< 0 005	17 5	---	< 0 005	0 05	< 0 005	---
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/20/1977	0 006	< 0 005	17 5	---	< 0 005	0 15	0 010	0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1977	< 0 005	< 0 005	14 0	---	< 0 005	0 08	0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	2/8/1978	< 0 005	< 0 005	---	---	< 0 005	---	0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/8/1978	< 0 005	< 0 005	---	< 0 02	< 0 005	---	< 0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	6/6/1978	< 0 001	< 0 005	---	< 0 02	0 005	---	0 015	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/11/1978	< 0 001	< 0 005	---	< 0 02	< 0 005	---	< 0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/16/1978	0 002	< 0 005	---	< 0 02	< 0 005	---	< 0 005	< 0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/12/1978	0 002	< 0 005	---	< 0 02	< 0 005	---	0 005	0 02
Bhwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1978	0 002	< 0 005	---	< 0 02	< 0 005	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/10/1979	0 002	< 0 005	---	---	< 0 005	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/6/1979	0 001	< 0 005	---	---	0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/7/1979	0 002	< 0 005	---	---	0 005	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/14/1979	0 002	0 005	---	---	0 015	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/10/1979	0 002	< 0 005	---	---	< 0 005	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/15/1979	0 002	< 0 005	---	---	< 0 005	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	10/16/1979	0 002	0 005	---	---	< 0 005	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/8/1980	0 001	< 0 005	---	---	0 005	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/12/1980	0 002	< 0 005	---	---	0 01	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/11/1980	< 0 001	< 0 005	---	---	0 005	---	< 0 005	0 07
Herb Bay	4	MB05TBS003	WQ0420	6/11/1980	< 0 001	< 0 005	15 0	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/9/1980	0 002	< 0 005	16 5	---	< 0 005	---	0 015	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/12/1980	0 002	< 0 005	13 0	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	9/11/1980	< 0 001	< 0 005	18 0	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/21/1981	< 0 001	< 0 005	10 0	---	0 01	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/19/1981	< 0 001	< 0 005	16 0	---	0 01	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/17/1981	0 003	< 0 005	13 0	---	0 005	---	0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/3/1981	< 0 001	< 0 005	18 0	---	0 02	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/29/1981	0 002	< 0 005	18 0	---	0 029	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	10/6/1981	0 004	< 0 005	15 0	---	0 12	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/12/1982	0 005	< 0 005	18 0	---	0 052	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/9/1982	0 001	< 0 005	21 2	---	0 045	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/10/1982	0 003	< 0 005	19 2	---	0 051	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/9/1982	0 001	< 0 005	17 1	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/8/1982	0 001	< 0 005	18 3	---	0 17	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/17/1982	0 003	< 0 005	42 0	---	0 02	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/5/1983	0 001	< 0 0010	16 2	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/23/1983	0 003	< 0 0010	16 8	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	9/21/1983	0 001	< 0 0010	17 3	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/11/1984	< 0 001	< 0 0010	18 5	---	< 0 005	---	< 0 005	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/6/1984	< 0 001	< 0 0010	17 5	---	< 0 005	---	< 0 005	< 0 02
Herb Lake Landing	5	MB05TBS017	WQ2275	7/29/1999	0 0035	< 0 0002	17 6	---	0 003	0 06	< 0 0005	---
Mean					0 005	0 004	17 795	0 020	0 014	0 062	0 007	0 020
Standard Deviation					0 010	0 001	5 663	0 000	0 025	0 048	0 003	0 005
Count					130	130	79	18	130	15	130	117

Table 3. (Continued)

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Magnesium Mg Extractable or Total mg/L	Manganese Mn Extractable or Total mg/L	Nickel Ni Extractable or Total mg/L	Potassium K Extractable or Total mg/L	Sodium Na Extractable or Total mg/L	Zinc Zn Extractable or Total mg/L	Cyanide CN Total mg/L
Taylor Bay	1	MB05TAS001	WQ0381	2/8/1978	---	---	0 005	---	---	< 0 020	---
Taylor Bay	1	MB05TAS001	WQ0381	3/8/1978	---	---	0 005	---	---	< 0 020	---
Taylor Bay	1	MB05TAS001	WQ0381	6/6/1978	---	---	0 025	---	---	< 0 010	---
Taylor Bay	1	MB05TAS001	WQ0381	7/11/1978	---	---	0 010	---	---	< 0 020	---
Taylor Bay	1	MB05TAS001	WQ0381	8/16/1978	---	---	0 020	---	---	0 030	---
Taylor Bay	1	MB05TAS001	WQ0381	9/12/1978	---	---	0 015	---	---	0 040	---
Taylor Bay	1	MB05TAS001	WQ0381	10/17/1978	---	---	0 010	---	---	< 0 020	---
Taylor Bay	1	MB05TAS001	WQ0381	1/10/1979	---	---	0 015	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	2/6/1979	---	---	0 010	---	---	0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	3/7/1979	---	---	0 010	---	---	< 0 020	0 06
Taylor Bay	1	MB05TAS001	WQ0381	6/14/1979	---	---	0 010	---	---	0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	7/10/1979	---	---	0 020	---	---	< 0 020	< 0 01
Taylor Bay	1	MB05TAS001	WQ0381	8/15/1979	---	---	0 015	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	10/16/1979	---	---	0 025	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	1/8/1980	---	---	0 005	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	2/13/1980	---	---	0 010	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	3/11/1980	---	---	< 0 005	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	6/11/1980	---	---	0 005	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	7/9/1980	8 00	---	0 020	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	8/12/1980	8 00	---	0 013	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	9/11/1980	8 00	---	0 008	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	1/21/1981	8 00	---	0 020	---	---	0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	2/19/1981	9 00	---	0 010	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	3/17/1981	8 00	---	0 010	---	---	0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	6/3/1981	8 00	---	0 010	---	---	< 0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	7/29/1981	8 00	---	< 0 005	---	---	0 020	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	10/6/1981	8 00	---	0 150	---	---	0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	1/12/1982	8 00	---	< 0 005	---	---	< 0 010	---
Taylor Bay	1	MB05TAS001	WQ0381	2/9/1982	9 75	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	3/10/1982	8 97	---	< 0 005	---	---	0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	6/9/1982	8 02	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	7/8/1982	7 29	---	< 0 005	---	---	0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	8/17/1982	5 75	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	7/5/1983	8 20	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	8/23/1983	8 59	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	9/21/1983	8 80	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	1/11/1984	9 50	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	2/7/1984	9 59	---	< 0 005	---	---	< 0 010	< 0 02
Taylor Bay	1	MB05TAS001	WQ0381	3/6/1984	9 58	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	2/8/1978	---	---	0 020	---	---	< 0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	3/8/1978	---	---	< 0 005	---	---	< 0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	6/6/1978	---	---	0 030	---	---	< 0 010	---
Anderson Bay	2	MB05TBS001	WQ0382	7/11/1978	---	---	0 010	---	---	< 0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	8/16/1978	---	---	0 020	---	---	0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	9/12/1978	---	---	0 015	---	---	< 0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	10/17/1978	---	---	0 010	---	---	< 0 020	---
Anderson Bay	2	MB05TBS001	WQ0382	1/10/1979	---	---	0 020	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	2/6/1979	---	---	0 010	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/7/1979	---	---	0 010	---	---	< 0 020	0 06
Anderson Bay	2	MB05TBS001	WQ0382	6/14/1979	---	---	0 010	---	---	0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	7/10/1979	---	---	0 015	---	---	< 0 020	< 0 01
Anderson Bay	2	MB05TBS001	WQ0382	8/15/1979	---	---	0 005	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	10/16/1979	---	---	0 015	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	1/8/1980	---	---	0 020	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	2/13/1980	---	---	0 010	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/11/1980	---	---	< 0 005	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	6/11/1980	---	---	0 005	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	7/9/1980	8 00	---	0 025	---	---	0 030	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	8/12/1980	7 40	---	0 015	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	9/11/1980	8 00	---	0 030	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	1/21/1981	8 00	---	0 030	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	2/19/1981	8 00	---	0 010	---	---	0 030	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/17/1981	8 00	---	0 010	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	6/3/1981	8 00	---	0 010	---	---	< 0 020	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	7/29/1981	8 00	---	< 0 005	---	---	0 030	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	10/6/1981	8 00	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	1/12/1982	8 00	---	< 0 005	---	---	0 010	---
Anderson Bay	2	MB05TBS001	WQ0382	2/9/1982	9 92	---	< 0 005	---	---	0 030	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/10/1982	8 96	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	6/9/1982	7 16	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	7/8/1982	7 51	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	8/17/1982	4 95	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	7/5/1983	7 84	---	< 0 005	---	---	< 0 010	< 0 02

Table 3. (Continued).

Wekusko Lake Location Description	Map Site No	EMS Site No	WQ Site No	Date	Magnesium Mg Extractable or Total mg/L	Manganese Mn Extractable or Total mg/L	Nickel Ni Extractable or Total mg/L	Potassium K Extractable or Total mg/L	Sodium Na Extractable or Total mg/L	Zinc Zn Extractable or Total mg/L	Cyanide CN Total mg/L
Anderson Bay	2	MB05TBS001	WQ0382	8/23/1983	8 58	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	9/21/1983	9 00	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	1/11/1984	9 50	---	< 0 005	---	---	< 0 010	< 0 02
Anderson Bay	2	MB05TBS001	WQ0382	3/6/1984	9 60	---	< 0 005	---	---	< 0 010	< 0 02
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	1/27/1976	9 00	< 0 02	0 010	< 2	< 10	< 0 005	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	2/16/1976	10 00	< 0 02	< 0 0100	< 2	< 10	< 0 005	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/16/1976	8 00	< 0 02	0 010	< 2	< 10	< 0 050	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	6/29/1976	8 00	0 02	< 0 0100	< 2	< 10	< 0 050	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/26/1976	7 00	0 02	< 0 0100	< 2	< 10	0 100	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1976	7 00	0 02	0 020	< 2	< 10	0 050	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/22/1976	8 00	0 02	< 0 0100	< 2	< 10	< 0 025	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/13/1976	8 00	< 0 02	< 0 0100	< 2	< 10	< 0 025	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/1/1977	8 00	< 0 02	0 010	< 2	< 10	< 0 050	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	5/31/1977	8 00	< 0 02	0 030	< 2	< 10	0 010	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/12/1977	8 00	0 03	< 0 005	< 2	< 10	< 0 010	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/17/1977	6 00	0 05	< 0 005	< 2	< 10	0 010	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/20/1977	7 00	0 07	0 005	< 2	< 10	< 0 010	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1977	8 00	0 04	0 020	< 2	< 10	0 030	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	2/8/1978	---	---	0 010	---	---	< 0 020	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	3/8/1978	---	---	0 015	---	---	< 0 020	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	6/6/1978	---	---	0 020	---	---	< 0 010	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	7/11/1978	---	---	< 0 005	---	---	< 0 020	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	8/16/1978	---	---	0 020	---	---	0 020	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	9/12/1978	---	---	0 005	---	---	< 0 020	---
Btwn Woosey Is & Wedge Pt	3	MB05TBS016	WQ0091	10/17/1978	---	---	0 015	---	---	< 0 020	---
Herb Bay	4	MB05TBS003	WQ0420	1/10/1979	---	---	0 020	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/6/1979	---	---	0 010	---	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/7/1979	---	---	0 005	---	---	< 0 020	0 05
Herb Bay	4	MB05TBS003	WQ0420	6/14/1979	---	---	0 020	---	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/10/1979	---	---	0 015	---	---	< 0 020	< 0 01
Herb Bay	4	MB05TBS003	WQ0420	8/15/1979	---	---	0 005	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	10/16/1979	---	---	0 020	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/8/1980	---	---	0 020	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/12/1980	---	---	0 005	---	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/11/1980	---	---	< 0 005	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/11/1980	---	---	0 005	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/9/1980	8 00	---	0 025	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/12/1980	8 00	---	0 013	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	9/11/1980	8 00	---	0 025	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/21/1981	7 50	---	0 020	---	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	2/19/1981	5 00	---	0 010	---	---	0 030	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/17/1981	< 5 00	---	0 010	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/3/1981	5 00	---	0 010	---	---	< 0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/29/1981	8 00	---	< 0 005	---	---	0 020	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	10/6/1981	8 00	---	0 024	---	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/12/1982	5 00	---	< 0 005	---	---	0 010	---
Herb Bay	4	MB05TBS003	WQ0420	2/9/1982	9 29	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/10/1982	7 64	---	0 005	---	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	6/9/1982	7 23	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/8/1982	7 74	---	< 0 005	---	---	0 080	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/17/1982	26 00	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	7/5/1983	7 65	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	8/23/1983	7 92	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	9/21/1983	8 27	---	< 0 005	---	---	< 0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	1/11/1984	8 74	---	< 0 005	---	---	0 010	< 0 02
Herb Bay	4	MB05TBS003	WQ0420	3/6/1984	7 06	---	< 0 005	---	---	< 0 020	---
Herb Lake Landing	5	MB05TBS017	WQ2275	7/29/1999	7 96	0 0092	< 0 002	1 21	3 01	0 019	0 021
Mean					8 164	0 027	0 012	1 947	9 534	0 012	0 007
Standard Deviation					2 351	0 015	0 014	0 204	1 805	130	91
Count					76	15	130	15	15		

Table 4. Other water quality data from Wekusko Lake at Herb Lake Landing, 1999.

Wekusko Lake Map Number		5
EMS Site Number		MB05TBS017
WQ Site Number		WQ2275
Date		7/29/1999
Laboratory Parameters		
Total Particulate Phosphorus P	mg/L	0.022
Total Soluble Phosphorus P	mg/L	0.006
Chlorophyll a	ug/L	2.0
Total Aluminum Al	mg/L	0.12
Dissolved Aluminum Al	mg/L	0.03
Total Antimony Sb	mg/L	0.001
Total Barium Ba	mg/L	0.0147
Total Beryllium Be	mg/L	< 0.001
Total Bismuth Bi	mg/L	< 0.0001
Total Boron B	mg/L	0.02
Total Cesium Cs	mg/L	< 0.0001
Total Cobalt Co	mg/L	< 0.0002
Total Lithium Li	mg/L	0.002
Total Molybdenum Mo	mg/L	0.0003
Total Rubidium Rb	mg/L	0.0013
Total Selenium Se	mg/L	< 0.002
Dissolved Reactive Silica Si	mg/L	4
Total Silver Ag	mg/L	0.0007
Total Strontium Sr	mg/L	0.0437
Total Tellurium Te	mg/L	< 0.001
Total Thallium Tl	mg/L	< 0.0001
Total Tin Sn	mg/L	< 0.0005
Total Titanium Ti	mg/L	0.0043
Total Tungsten W	mg/L	0.0005
Total Uranium U	mg/L	< 0.0001
Total Vanadium V	mg/L	0.001
Total Zirconium Zr	mg/L	0.0006

Appendices 1 through 3

Appendix 1. Students t tests (α = 0.05) between 2003 log transformed data and historical log transformed data for Wekusko Lake.

Parameter	Bacteria *Escherichia coli*	pH	Specific Conductivity	Solids Total Dissolved	Solids Total Suspended	Turbidity	Colour True	Alkalinity Total	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Hardness Total	Oxygen Dissolved	Carbon Total Organic	Carbon Total Inorganic	Chlorophyll a	Nitrogen Ammonia	Nitrogen Nitrate and Nitrite	Nitrogen Total Kjeldahl	Phosphorus Total
Units	Organisms /100mL	Laboratory (Not Logged) pH units	uS/cm	mg/L	mg/L	NTU	Colour Units	$CaCO_3$	HCO_3 mg/L	mg/L	OH mg/L	$CaCO_3$ mg/L	All mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mean 2003	1.000	7.629	2.223	1.966	0.390	0.051	0.699	1.853	1.940	-0.301	-0.301	1.867	0.914	0.992	1.230	0.678	-1.410	-1.984	-0.196	-1.612
Std. Deviation	0.000	0.318	0.007	0.079	0.324	0.339	0.000	0.016	0.016	0.000	0.000	0.007	0.030	0.028	0.020	0.370	0.338	0.089	0.281	0.134
Count	19	19	19	10	10	19	10	10	10	10	10	10	10	10	10	19	19	19	19	19
Mean Historic	1.000	7.917	2.184	1.999	0.755	0.103	0.844	1.851	1.936	-0.250	-0.284	1.886	1.031	1.152	1.196	0.301	-1.539	-1.558	-0.302	-1.633
Std. Deviation	0.000	0.290	0.040	0.105	0.123	0.253	0.162	0.088	0.088	0.238	0.149	0.065	0.108	0.072	0.067		0.392	0.544	0.095	0.171
Count	128	130	129	15	118	58	15	79	79	76	76	15	113	66	66	1	9	129	124	129
t=	0.000	-3.987	4.222	-0.830	-7.552	-0.710	-2.807	0.072	0.147	-0.682	-0.361	-0.911	-3.408	-6.886	1.583	Insufficient	0.897	-3.403	3.197	0.521
Pooled df	145	147	146	23	126	75	23	87	87	84	84	23	121	74	74	Sample	26	146	141	146
Significance	Not Significant	Significant Decrease	Significant Increase	Not Significant	Significant Decrease	Significant Decrease	Significant Decrease	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Significant Decrease	Significant Decrease	Not Significant		Not Significant	Significant Decrease	Significant Increase	Not Significant

Parameter	Phosphorus Total Particulate	Phosphorus Total Soluble	Chloride Dissolved	Sulphate Dissolved	Aluminum Total	Aluminum Dissolved	Antimony Total	Arsenic Total or Extractable	Barium Total	Beryllium Total	Bismuth Total	Boron Total	Cadmium Total or Extractable	Calcium Total or Extractable	Cesium Total	Cobalt Total	Copper Total or Extractable	Iron Total or Extractable	Lead Total or Extractable	Lithium Total
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mean 2003	-1.773	-2.144	0.527	0.791	-1.331	-1.745	-3.332	-2.961	-1.932	-3.699	-3.699	-2.000	-4.398	1.202	-4.000	-3.699	-3.256	-1.403	-3.699	-2.551
Std. Deviation	0.171	0.143	0.024	0.013	0.326	0.334	0.059	0.045	0.024	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.218	0.511	0.000	0.051
Count	19	19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Mean Historic	-1.658	-2.222	0.367	0.745	-0.921	-1.523	-3.000	-2.683	-1.833	-3.000	-4.000	-1.699	-2.398	1.235	-4.000	-3.699	-2.111	-1.331	-2.207	-2.699
Std. Deviation			0.101	0.113				0.427					0.258	0.114			0.372	0.344	0.193	
Count	1	1	14	13	1	1	1	130	1	1	1	1	130	79	1	1	130	15	130	1
t=	Insufficient	Insufficient	4.889	1.279	Insufficient	Insufficient	Insufficient	-2.050	Insufficient	Insufficient	Insufficient	Insufficient	-24.481	-0.889	Insufficient	Insufficient	-9.573	-0.419	-24.415	Insufficient
Pooled df	Sample	Sample	22	21	Sample	Sample	Sample	138	Sample	Sample	Sample	Sample	138	87	Sample	Sample	138	23	138	Sample
Significance			Significant Increase	Not Significant				Significant Decrease.					Significant Decrease.	Not Significant			Significant Decrease.	Not Significant	Significant Decrease.	

Parameter	Magnesium Total or Extractable	Manganese Total or Extractable	Molybdenum Total	Nickel Total or Extractable	Potassium Total or Extractable	Rubidium Total	Selenium Total	Silica Total	Silver Total	Sodium Total or Extractable	Calcium Total or Extractable	Strontium Total	Tellurium Total	Thallium Total	Tin Total	Titanium Total	Uranium Total	Vanadium Total	Zinc Total or Extractable	Zirconium Total
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mean 2003	0.913	-1.978	-4.000	-3.562	0.113	-2.985	-3.699	0.217	-4.699	0.526	1.202	-1.451	-3.699	-4.699	-3.699	-2.562	-4.000	-3.581	-2.832	-2.699
Std. Deviation	0.025	0.129	0.000	0.178	0.014	0.075	0.000	0.129	0.000	0.023	0.011	0.038	0.000	0.000	0.000	0.334	0.000	0.152	0.292	0.000
Count	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Mean Historic	0.901	-1.627	-3.523	-2.041	0.286	-2.886	-2.699	0.602	-3.155	0.965	1.235	-1.360	-3.000	-4.000	-3.301	-2.367	-4.000	-3.000	-1.770	-3.222
Std. Deviation	0.090	0.209		0.288	0.056					0.135	0.114								0.210	
Count	78	15	1	130	15	1	1	1	1	15	79	1	1	1	1	1	1	1	130	1
t=	0.417	-4.732	Insufficient	-18.537	9.458	Insufficient	Insufficient	Insufficient	Insufficient	-10.154	-0.889	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	-14.964	Insufficient
Pooled df	84	23	Sample	138	23	Sample	Sample	Sample	Sample	23	87	Sample	Sample	Sample	Sample	Sample	Sample	Sample	138	Sample
Significance	Not Significant	Significant Decrease.		Significant Decrease.	Significant Decrease.					Significant Decrease.	Not Significant								Significant Decrease.	

1 Where there were significant decreases in trace metals this was frequently due to a changes in analytical methods and a reduction in analytical detection limits over time.

Appendix 2. Variables with objectives based on Williamson (2002) with highlighted of objectives used in the CCME Water Quality Index.

Variable	Units	Unlisted or Explanation	Drinking Water (D)	Recreation (R)	Aquatic Life (A)	Irrigation (I)	Greenhouse (GI)	Field Crop (FI)	Livestock (L)	Other
Bacteria										
Fecal Coliform	CFU/100 mL		Treat to 0	200						
Eschencia coli	CFU/100 mL		Treat to 0	200						
Temperature	°C		15 Aesthetic		Calculated					
pH	pH Units		Treat to 6.5-8.5	5.0-9.0	6.5-9.0					
Specific Conductivity	uS/cm		700				1000	1500	4300	
Solids										
Total Dissolved	mg/L		500 Aesthetic				700	1000	3000	
Total Suspended	mg/L				5 for background < 25 (30 day average) 25 for background < 250 (1 day average)					
Turbidity	NTU		5 Aesthetic & treat to 1							
Transparency										
Secchi Disc	m	Unlisted								
True Colour	Colour Units		15 Aesthetic							
Alkalinity										
Total Alkalinity	mg/L									
Bicarbonate	mg/L	Unlisted								
Carbonate	mg/L	Unlisted								
Hydroxide	mg/L	Unlisted								
Oxygen	mg/L									
Dissolved Oxygen	mg/L	Cool water aquatic life 3 to 6 dependant on duration & temperature			5 instantaneous minimum for early life stages					
Oxygen Saturation	%				0.47%					
BOD	mg/L	Listed for effluent but not ambient waters								
Nitrogen										
Total Ammonia	mg/L				Calculated				100	
Nitrate-Nitrite	mg/L		10							
Kjeldahal Nitrogen	mg/L	Unlisted								
Phosphorus										
Total P	mg/L	Objective under review	Promotes nuisance algae or rooted plant growth							0.05 in rivers & 0.025 in lakes
Particulate P	mg/L	Unlisted								
Dissolved P	mg/L	Unlisted								
Chlorophyll a	ug/L	Unlisted								
Carbon										
Total C	mg/L	Unlisted								
Total Inorganic C	mg/L	Unlisted								
Total Organic C	mg/L	Unlisted								
Chloride	mg/L		250 Aesthetic				100	700	1000	
Sulphate	mg/L		500 Aesthetic							
Hardness	mg/L		200 Aesthetic						1000	
Calcium	mg/L									
Magnesium	mg/L	Unlisted								
Potassium	mg/L	Unlisted								
Sodium	mg/L		200 Aesthetic				4	6		
Sodium Adsorbtion Ratio	SAR									
Cyanide	mg/L		0.2		Calculated					
Trace Elements										
Aluminum	mg/L				0.1 > 6.5 pH , 0.005 < 6.5 pH	5.0			0.5	
Arsenic	mg/L	Aquatic life 4 day & 1 hr	0.025		0.15 & 0.34			0.1	0.25	
Antimony	mg/L		0.006							
Barium	mg/L			1000						
Beryllium	mg/L	Unlisted								
Bismuth	mg/L	Unlisted								
Boron	mg/L		5.0				0.5	6.0	5.0	
Cadmium	mg/L		0.005		Calculated	0.0051			0.08	
Chromium	mg/L		0.05							
Hexavalent Chromium	mg/L				0.011 & 0.016	0.008			0.05	

Appendix 2. (Continued)

Variable	Units	Unlisted or Explanation	Drinking Water (D)	Recreation (R)	Aquatic Life (A)	Irrigation (I)	Greenhouse (GI)	Field Crop (FI)	Livestock (L)	Other
Cobalt	mg/L					0.05			0.1	
Copper	mg/L	Aquatic life dissolved	1.0 Aesthetic		Calculated		0.02	0.1	0.5-5.0	
Cesium	mg/L	Available for radio isotopes only								
Iron	mg/L		0.3 Aesthetic		0.3	5.0				
Lead	mg/L		0.01		Calculated	0.2			0.1	
Lithium	mg/L					2.5				
Manganese	mg/L		0.05 Aesthetic			0.2				
Molybdenum	mg/L				0.073		0.01	0.05	0.5	
Nickel	mg/L				Calculated	200			1000	
Rubidium	mg/L	Unlisted								
Selenium	mg/L		0.01		0.001		0.02	0.05	0.05	
Silver	mg/L		0.0001							
Strontium	mg/L	Available for radio isotopes only								
Telurium	mg/L	Unlisted								
Thallium	mg/L		0.0008							
Tin	mg/L	Unlisted								
Titanium	mg/L	Unlisted								
Tungsten	mg/L	Unlisted				0.01			0.2	
Uranium	mg/L		0.1			0.1			0.1	
Vanadium	mg/L	Unlisted					1.0	5.0	5.0	
Zinc	mg/L		5.0 Aesthetic		Calculated					
Zirconium	mg/L	Available for radio isotopes only								
Pesticides									100	
2, 4-D	ug/L		100		4				100	
2, 4-DB	ug/L		100		4				100	
2, 4-DP	ug/L		100		4				100	
2, 4, 5-T	ug/L				4				100	
2, 4, 5-TP	ug/L									
Alachlor	ug/L	Unlisted								
Aldrin	ug/L		0.7		1.8	10			5	
Atrazine	ug/L		5							
Azinphos-Methyl	ug/L		20			0.2			1100	
Bromacil	ug/L		5		5	0.33			11	
Bromoxynil	ug/L		5		1.8				45	
Carbofuran	ug/L		90							
Cis-Chlordane	ug/L	Sediment concentrations only								
Trans-Chlordane	ug/L	Sediment concentrations only							24	
Chlorpyrifos-ethyl	ug/L		90		0.0035				170	
Chlorothalonil	ug/L				0.18	5.8				
DDD p,p	ug/L	Sediment concentrations only								
DDE p,p	ug/L	Sediment concentrations only								
DDT p,p	ug/L	Sediment concentrations only							2.5	
Deltamethrin	ug/L				0.004					
Diazinon	ug/L		2.5						122	
Dicamba	ug/L		120		10	0.006				
Diclofop	ug/L	See Diclofop-Methyl							9	
Diclofop-Methyl	ug/L		9		6.1	0.18				
Dieldrin	ug/L		0.7						3	
Dimethoate	ug/L		20		6.2				150	
Dinoseb	ug/L		10		0.05	16				
Endosulfan I	ug/L				0.02					
Endrin	ug/L	Sediment concentrations only								
Eptam	ug/L	Unlisted								
Ethfluralin	ug/L	Unlisted							100	
Fenoxaprop	ug/L				4				280	
Glyphosate	ug/L		280		65					

Appendix 2. (Continued).

Variable	Units	Unlisted or Explanation	Drinking Water (D)	Recreation (R)	Aquatic Life (A)	Irrigation (I)	Greenhouse (Gl)	eld Crop (Fl)	Livestock (L)	Other
(HCH Alpha)	ug/L	Sediment concentrations only								
HCH Beta	ug/L	Sediment concentrations only								
HCH Delta	ug/L	Sediment concentrations only								
Lindane (HCH Gamma)	ug/L	Sediment concentrations only			0.01				4	
Heptachlor	ug/L	Sediment concentrations only								
Heptacior-Epoxide	ug/L	Sediment concentrations only								
Imazethabenz	ug/L	Unlisted								
Malathion	ug/L		190							
MCPA	ug/L				2.6	0.025			25	
Mecoprop	ug/L				4				100	
Methoxychlor p,p	ug/L		900							
Metribuzin	ug/L		80		1.0	0.5			80	
Metsulfuron-Methyl	ug/L	Unlisted								
Mirex	ug/L	Unlisted								
Parathion-Ethyl	ug/L	for Total Parathion	50							
Parathion-Methyl	ug/L	for Total Parathion	50							
Pentachlorophenol	ug/L		30 Aesthetic, 60 Health		0.5					
Picloram	ug/L		190		29				190	
Propachlor	ug/L	Unlisted								
Propanil	ug/L	Unlisted								
Propoxur	ug/L	Unlisted								
Quizlofop	ug/L				4				100	
Simazine	ug/L		10		0.5	10			10	
Terbufos	ug/L		1							
Tifensulfuron	ug/L	Unlisted								
Triallate	ug/L				0.24				230	
Tribenuron	ug/L	Unlisted								
Triclopyr	ug/L	Unlisted								
Trifluralin	ug/L		45		0.2				45	
Other										
Total Phenols	mg/L				0.004				0.002	

Appendix 3. Canadian Council of Ministers of the Environment Water Quality Index (CCME WQI), water quality variables and objectives or guidelines (Williamson 2002) used to calculate CWQI values (CCME 2000).

Variables	Units	Objective* Value	Objective* Use
Fecal Coliform MF	Bacteria/100mL	200	Recreation
Ph	Ph Units	6.5-9.0	Aquatic Life
Specific Conductivity	uS/cm	1000	Greenhouse Irrigation
Total Suspended Solids	mg/L	25 (mid range)	Aquatic Life
Dissolved Oxygen	mg/L	5 (mid range)	Aquatic Life
Total Arsenic	mg/L	0.025	Drinking Water, Health
Dissolved Aluminum	mg/L	0.1 for pH >6.5	Aquatic Life
Total or Extractable Cadmium	mg/L	Calculation based on Hardness (7Q10)	Aquatic Life
Total or Extractable Copper	mg/L	Calculation based on Hardness (7Q10)	Aquatic Life
Total or Extractable Lead	mg/L	Calculation based on Hardness (7Q10)	Aquatic Life
Total or Extractable Nickel	mg/L	Calculation based on Hardness (7Q10)	Aquatic Life
Total or Extractable Zinc	mg/L	Calculation based on Hardness (7Q10)	Aquatic Life
Total or Extractable Manganese	mg/L	0.05	Drinking Water, Aesthetic
Total or Extractable Iron	mg/L	0.3	Drinking Water, Aesthetic
Total Ammonia as N	mg/L	Calculation based pH	Aquatic Life
Soluble or Dissolved Nitrate-Nitrite	mg/L	10	Drinking Water, Health
Total Phosphorus	mg/L	0.05 in Rivers or 0.025 in Lakes	Nuisance Plant Growth
Dicamba	ug/L	0.006 where detectable	Irrigation
Bromoxynil	ug/L	0.33	Irrigation
Simazine	ug/L	0.5	Irrigation
2,4 D	ug/L	4	Aquatic Life
Lindane	ug/L	0.08	Aquatic Life
Atrazine	ug/L	1.8	Aquatic Life
MCPA*	ug/L	0.025 where detectable	Irrigation
Trifluralin	ug/L	0.2	Aquatic Life

CCME CWQI (CCME 2001) Category ranges: 95-100 Excellent; 80-94 Good; 60-79 Fair; 45-59 Marginal; 0-44 Poor

$$\text{CCME CWQI} = 100-(((F_1^2+F_2^2+F_3^2)^{1/2})/1.732)$$

Scope F_1 = ((Number of variables with an objective not met)/(Total number of variables))x100

Frequency F_2 = ((Number of samples with an objective not met)/(Total number of samples))x100

Amplitude $F_3 = ((nse/(0.01nse + 0.01))$

Where *nse* is the normalized sum of test excursions:

$nse = (\text{Sum of excursions}_i)/(\text{Total number of tests})$

Where test values must not exceed the objective:

$\text{excursion}_i = (\text{Concentration}_i)/(\text{Objective}_i)$

Where test values must not fall below the objective:

$\text{excursion}_i = (\text{Objective}_i)/(\text{Concentration}_i)$

Where the objective is zero:

$\text{excursion}_i = \text{Concentration}_i$